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Softgold

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**EDUCATION
ISSUE**

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Softgold



ABOUT SOFTGOLD

This magazine is for computer users - especially Tandy, IBM and Viatel users.

The material is supplied by the users. It is volunteered and remains the property of the individual authors.

Authors can be contacted by placing your letter in a self addressed, stamped envelope care of GOLDSOFT.

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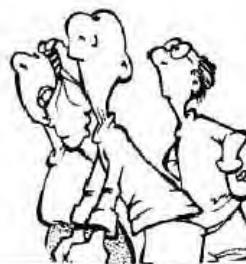
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CLUBROOM

The T1400 LT

This month, Clubroom is being written on the (very) new T1400 LT.

I can't remember being so impressed with a computer for a long while.

This little computer appears to be 100% T1000 compatible, has 768K of RAM on board, has a full size 76 key keyboard, has a very legible backlit LCD screen and a host of other features including two 3.5" 720K drives.

The CPU is the NEC V-20, which is an 8088 equivalent, operating at 7.16Mhz.

But it is not the specifications that impress me!

What impresses me with the T1400 is its 'usability'. I can pick this machine up - it is about twice the size of the T200 - and I can take it just about anywhere!

And when I get there - or even on the way there, I have total access to the files/data I may have been working on in the office.

The biggest boon for me personally is that the computer will even run our "Gertie" program - the big number cruncher that operates our Bulletin Boards on Viatel - AND it runs Gertie TWICE as fast!!!

So now, I can go interstate and update Viatel automatically from wherever I am!

The Leisure Expo (Qld)

In October we attended the Brisbane Leisure Expo which was held in the RNA grounds in Brisbane.

This was the first time the Expo has been held, but it looks set to become a regular event.

The Leisure Expo is different to the type of show we usually attend, in that the focus was on Leisure - not on computers.

Some of the other displays included a Gyrocopter; Exercise Weights - (with a video that had Karen & Meredith going!); custom made vehicles of many types; custom made beds; computer games machines and a Hovercraft! So it was a very interesting display.

We found ourselves not on the Tandy display for a change!

Instead we were on the Considering Computers stand, new advertisers of ours, and associates of the group who supply our new Public Access Videotex machines.

Compared to computer shows,

this show was not well attended - still, it was fun!!

The next show we do will be the Brisbane Computer Show, which is always well attended - hope to see some of you at that one!

Posture and Computers

One of the companies on our stand at the recent Expo, was CHAIR'ING Co. Pty Ltd. (Yes - their real name!)

They supply seating for computer users, and the line of chairs available really proves that for every computer user, there is a chair that he/she will feel comfortable with, and more importantly, that will assist the user's posture and reduce the possibility of contracting RSI.

Next month we will feature a selection of photos of these chairs.

Prices are about the same as for a good normal chair, so there really is no excuse for that sore back anymore!

Blaxland Computer Services

Blaxland Computer Services have always been the place to shop in the Sydney area, for top quality back up and support.

This Christmas they have brought in a range of new software for the CoCo 3 and for the T 1000 (& IBM compatibles).

Items for the CoCos like CoCoMax 3, ColorMax 3, CoCo Graphics Designer, and for the T1000 like The Shareware Book, The LPC Series, In House Accounting, and Ability all make a phone call or visit to Blaxland well worth the effort.

Bruce and Roger are the real gentlemen of the industry too - so you have no worries when you deal with Blaxland Computer Supplies!

Yes, You Can Charge it Monthly!

We've been asked so often for this service, we have decided to do it.

You have always been able to permanently book your CoCoOz and Softgold on Tape Disk on our monthly charging system, but from now on, we can also charge you monthly for your magazine - when it is purchased with CoCoOz or Softgold on Tape or Disk.

All you have to do is tell us your credit card number and we will ship your magazine & tape with all the subscriber magazines at the start of each

month until you tell us to stop!

We can't bill for magazines only unfortunately, because of the credit card system, which makes transactions below \$10 uneconomic.

So now, we can auto bill you not just for your favourite tape or disk - but also for your magazine - when purchased with that tape or disk!

User of the Month



David Hill is a MC 10 user from Oakville, NSW. David is seen here with Jeff Ball in the Dark Room at school.

David recently submitted a very mysterious program for the MC 10 called "A Miss at Goal".

We'll have to wait until that one is printed in the magazine to see what that is all about!!

More MS DOS!!!

As you can see, this magazine is starting to become more MS DOS oriented - not that this means a change of editorial policy, because we've always said that this is what we wanted for Softgold - its just that people are at last starting to submit articles and programs for that computer to us.

Softgold continues to be directed at new computer users, and we especially thank those of you who submitted work with the Christmas "newies" in mind!

Our family of Tandy, IBM and Viatel users is growing steadily and this is reflected in the steady rise of interest in Softgold magazine.

Adelaide / Melbourne

Here I come to the "Gulp!" department!

I feel guilty about this, but unfortunately I've had to cancel plans to be in the southern states this month.

WHAT PRICE QUALITY AND SAFETY?

By John Poxon

Probably every user group across Australia has its resident hardware "expert", or at least, someone assuming that title. Such a person usually does the upgrades, advises others on the ins and outs of this or that piece of electronic equipment, etc.

If you intend to have such a person do work for you in the near future, or have recently had some work done, then this article is for you. Read on.

Most people unfortunately seem to cast discretion to the wind when buying computer peripherals or services. The caution with which they would naturally approach buying a new car, for example, is suspended.

Take for instance the purchase of a new disk drive system. There are a number of variables associated with both the performance and safety of such a device, yet precious little consideration is given to them by the purchaser. My observations have been that often consideration of quality, reliability and safety pale into insignificance by comparison with the dollars and cents of the deal. What the "*\$@%" is he talking about, I hear you say, I'll tell you.

Consider first the most important aspect of any electrically driven device - it's safety. When you buy a toaster or a micro-wave oven, do you stop to consider whether it is electrically safe? Probably not, with good reason: the device has been tested by the electrical authorities and has thereby satisfied certain electrical and mechanical standards regarding sub assemblies, assembly, and earthing. Failure to adhere to these standards may result in an electrically unsafe condition, either immediately or in the future.

The problem with the local expert may be that he has less expertise than you think. He almost certainly knows more than you do, that's why you regard him as an expert. But expertise in the electrical industries is usually associated with some certification, either a full or restricted electrical licence. Does your expert have an electrical ticket of any kind? Perhaps not. Even the possession of an electrical ticket doesn't ensure that work is done to an adequate quality, if it's being done for example,

in a backyard shed on weekends, or under a house with less than adequate conditions, and is not subject to electrical inspection.

Let me give a couple of examples.

About two years ago I decided to buy a drive system (containing a Mitsubishi drive, as it turned out) from a local "expert". The absence of a case fastening screw, the misalignment of the remaining screws and the looseness of the second drive blanking plate prompted me to take a look inside. I was astounded to find that there was no fuse, that no insulation was present on the high voltage connections, and that the transformer secondary windings were pressed against the metal case, just begging for a short circuit! This eventuality had been postponed for a while by the prudent wrapping of the transformer in masking tape!

Since this person is, I understand, an electrician, I found the poor quality of work even more astounding. I returned the unit to him for a refund. He didn't seem at all surprised at my reasons for the return. Perhaps he was used to such complaints. I should add, for the sake of a latter portion of this article, that the drive itself had a light coating of fine grit, and the power supply printed circuit board was a crude home made job, with ragged tracks and no sealing against corrosion.

Here's another. Recently I looked at the construction of another drive system, this time built by someone who I would regard as having much more knowledge. Though it was assembled much better, it still would not pass an electrical inspection by SEQEB (our electrical authority here in Brisbane). High voltage connections were not insulated, the wrong type of fuse holder was installed, and the method of earthing was totally incorrect. Here also the electrocution of the owner was a possibility.

The message I'm trying to get across here is that electrical safety is very important, and may not receive adequate emphasis from a backyard assembler, either through ignorance, laziness or indifference.

I made these comments to someone well up on the CoCo scene and was surprised to hear him say "Who cares about whether the drive system is assembled to

correct standards as long as it works and the price is right?" That's the bottom line or words to that effect. Such blindness is obviously well entrenched and is going to cost someone their life sooner or later.

You may wonder about the drive (or other mains powered device) which you purchased recently from a home based constructor. How can you tell if it's safe? I suggest a visit to your local electrical authority or it's equivalent in your state. Ask them to check it for electrical safety and get the results in writing. Then, if there is anything wrong, take the unit back to the "expert" and ask him to fix it.

However, if the drive has an electrical approval plate on it somewhere, it means that the manufacturer has been sufficiently responsible to have that model tested, and you may be confident of its safety, (though perhaps not of its quality).

Let's talk about quality. Again I'll address myself to drives, though these comments are broadly applicable to almost any electrical or electronic manufacturing process. An example: I know of a drive being assembled by a backyard expert which is being put out at an amazingly low figure. I gather that people are queuing up to buy these drive systems on the basis of the low price and the recommendation of a local who has some respect. In conversation with other real experts the same opinion was voiced each time: "a decent drive cannot be assembled for that price, even less can a warranty be offered". I checked the quality of the bare drive, and found that a quantity of that make of drive had recently been bought and subsequently returned by a large organisation with which I'm associated. Apparently these are rather unreliable.

The point I'm trying to put across here is that price is not the ultimate criterion of value in a computer peripheral. The real criterion is the product of reliability and safety. A drive which is low cost, but also has a lifetime of say two years before it cracks up, perhaps after a history of data errors, is not as good value as a drive which performs effortlessly for say 5 to 10 years.

My sincere apologies to all of you who have been effected by this change of plan.

Let's think about a date in March 1988 and do it then.

Software Downloads on Viatel

As we went to press, Ron Wright was pretty close to having the software prepared to allow CoCo users to download

software from Viatel.

This is the development we've all been waiting for!

We are looking forward to having this service online before Christmas - Murphy's Law permitting!

Viatel Billing

We've had a number of people report instances of computer error in the Viatel billing system.

We are interested in hearing from anyone else who has had similar problems.

Survey '88 - The Winner of the Competition!

Incredible number of entries to the Survey this year!

Thank you all for your help! I'll summarise the surveys next month!

However we do have a winner for the contest section.

Most people had suggestions as to what we should call our new software download service on Viatel.

Here are a few:

Softdown, Goldware, Golden Opportunities, Softlink, Goldloads, Golddump, Downware, Diamond Link, Quick Gold, Action, Supersoft, Gold Nuggets, Gold Mine, CoCoSoft, Viasoft, Goldtel, Solid Gold, Com Soft, and T(Candy) Bar.

There were heaps more, but after due consideration, the judges have decided to award the prize of 10 boxes of double density diskettes to Michael Monck for "SoftLink".

Look for this name - and more importantly, software downloads for your Tandy or IBM computer - on node 6423 on Viatel real soon!

(Downloads for Commodore computers will be provided soon by Commodore Connection on Viatel 6420!)

Oh, and congrats to Michael!

Golddisks 1 - 3

Deon has been typing his fingers to the bone to get Golddisks 3 and 4 ready for Christmas!

But finally they are here.

Each disk contains up to 15 programs from previous Softgold magazines for the T 1000 or IBM.

Contests

I think this happened last year!

What with computer shows, two extra magazines to get done before Christmas, and a host of other work, we feel that it is only right to extend the various contests that were to have closed in November until 7th February next year.

This will give you all a bit more time to get some of those typing fingers into gear too!

If you have an idea for the Bi-Centennial program, but would like someone else to help you,

let us know and we'll put you in touch with a like minded person!

Users Group News

Firstly, on behalf of us all, but especially the users of Melbourne, we send our condolences to Joy Wallace, our former contact for the Melbourne Colour Computer Club.

Joy's husband passed away recently.

Les Leishman will be taking over from Joy as contact for the time being.

His phone number is 03 484 0822.

Rosemary Litzow is starting a group at Cannon Hill in Brisbane.

Rosemary's phone number is 07 395 0863.

Anyone in the area who needs help or would like to attend the group, please contact her.

We heard from our friend Peter Van Houts at Violet Town recently, and he tells me there is a group starting in the area - probably based at Benalla. Call Tandy at Benalla for more details - their phone number is 057 62 4155.

On a personal note, Peter and his wife Judy, are expecting their second child in a few months - we look forward to a photo in due course!!

Christmas Party



Don't forget!!

The Christmas Bash on the 12th and 13th December on the beach at Southport is definitely still on!!

There will be Viatel users from all over the east coast - as well as a number of Tandy Computer users! And we will be using a Cellular Phone Viatel terminal to update Viatel LIVE from the Beach all night!

Yes - the party is an all night party - don't expect to leave before 10am!!

Our thanks to the groups who continue to send newsletters.

For space reasons, I won't summarize these this month, but be it made known that groups like the OS-9 Users' Group, AMUG, Port Noarlunga, La Trobe and Peninsular Users' Groups are producing these days, excellent quality newsletters! Each one is worth investing in!

Education & This Issue.

The days when people write programs to do a particular task BECAUSE THEY HAVE TO, are fast passing.

Nowhere is this more evident than in the Education arena.

Which is not to say that people will not continue to write programs for all sorts of purposes - because professional programmers can never hope to keep up with individual needs.

In education, the CoCo 3 has been passed by as an education tool, in all but the most sophisticated schools, and the move is away from the Apples to the IBM's and clones.

But even here the move is to the use of pre-written programs

rather than the development of programs to do tasks perceived necessary by the local body.

Nice it is to know then, that our programmers are still turning out education programs of the calibre to be found in this month's Softgold.

The point is this - you may have access to a very wide range of software that fills your current needs quite well - but home user or teacher - there will always be a time when you will need the computer to do something for you that you are unable to get from commercial software.

The answer lies in developing and maintaining an interest in programming.

If you own a TI1000, Basic is a good start, but Pascal is the language more commonly used.

We are very proud of the efforts shown in this magazine this month.

A special thanks goes to Bob Horne who continues to inspire us all with his quality work.

Welcome to the New Advertisers

I'm often reminded that one of the reasons people purchase our magazines is to see the ads.

This seems at first to fly in the face of the reason we watch TV - but then again, our

magazine is no TV station!

The CoCo is such a "closed shop" computer that it has always been difficult convincing advertisers that the magazine was the place to show off their wares.

But in today's age of the compatible computer, all that is slowly changing and advertisers are discovering the strength in the Tandy market - the one we address of course!

So we welcome two new advertisers to these pages this month, and we ask that our readers PLEASE mention us when you are talking to them!

The Tandy Store Award

The Tandy Store Award this month goes to Gwyn Morgan at Ringwood.

Unfortunately for our users in that area, Gwyn is leaving Tandy, but we couldn't let him go without thanking him once more for the great support he has been to the Tandy users in that area.

Gwyn is having a month or so off, before he decides what he will do next - something a lot of Tandy managers seem to do when they leave - I wonder why!!



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John Poxon

94 Chatswood Rd., Slacks Creek. Q. 4127
Phone (07) 208 7820



THE OH! ZONE

by Alex and Deon

All your computer hassles answered!!!

Dear Deon,
Enclosed you will find the Latrobe Valley Bulletin. I hope you enjoy the reading. The three groups, namely the Moe, Morwell and Traralgon User Groups, all pitch in to produce this newsletter. The way we do it is to give every one a go. That is, one town produces a newsletter every three months. This month, (August) Traralgon had the pleasure in producing the newsletter.

While I have your attention, would it be possible to publish a list of well known IBM compatible boards that are known to run with little (if not any) trouble on the Tandy 1000?

I know that the long boards

are physically impossible to fit in. A lot of the shorter boards fit, eg. HardCard, RS232, and Clock and Calendar cards.

A list of these boards and maybe their suppliers, and a short description would be (I'm sure) greatly appreciated by all T1000 owners. At the moment I notice a great majority of the ads in your magazines are CoCo related. This was great when I owned a number of CoCo2s and a CoCo3, but now I own a T1000.

Until next time I bid you farewell.

Happy Computing
Leigh Daws

Dear Leigh,

I seem to be confused. I also own a Tandy 1000, and, like you wanted to expand. Knowing the fact that the Tandy 1000 is one of the best IBM compatibles, I just asked Tony Lloyd, (of GT Computing) in Melbourne for a memory board. He sent me one up. I had no trouble whatsoever fitting it in. Please tell me which boards you had difficulty fitting in.

As for your comment on Softgold and CoCo having more CoCo related than Tandy 1000 and IBM articles and ads I hope to fix that! I am here to receive any information ANYONE would care to send concerning the topic and hope to make SOFTGOLD at least 50% Tandy 1000 and IBM compatible.

So if you have some "home made" programs you would like to send in, or if any of your user group members would like to contribute, please feel free to do so.

Deon

Dear Deon

I own a Tandy 1000 Computer and Monochrome Monitor.

I have been anxious to obtain the listings for games and databases for my computer and have checked all the 1987 issues of Australian Rainbow Magazine, CoCo Magazine and Softgold for this purpose.

The only programme which appears to have been published is in the January 1987 edition of Australian CoCo called All Raid.

I should be pleased if you would advise whether there are any other publications containing listings suitable for the Tandy 1000 computer and if so, what those are - or alternatively whether you are able to advise where such listings may be obtained?

Yours faithfully
G.W. Williams

Dear Mr Williams,

Unfortunately I haven't heard of any publication that has programs for the Tandy 1000 and IBM Compatibles. Your best bet is to look through old computer magazines or even buy a book of basic programs and converting

them over to work on the 1000. There shouldn't be too much worry because BASIC is a universal computer language. The only major thing to watch out for is the Peeks and Pokes.

But the best bet is to watch this magazine, this month and over the next few months, as we begin to expand our service to you.

Deon

Dear Deon

Hi my name is Peggy and I am having problems with my brand new Tandy 1000. I am having problems trying to get the modem working through Deskmate. I tried to hook up to Austpac, but I can't get the right settings and the modem isn't dialing the number.

I have the Tandy Internal Modem (Cat no: 25-9402) and a 256K Tandy 1000 with 2 disk drives.

Could you help me please?
Peggy Cradduck

Dear Peggy,

Great hearing from you!

The most important thing to know if you are going to use this modem with Deskmate, is to make sure the pins are set on COM1. If you are unsure, then pop along to your local Tandy shop and get them to check for you. I'm sure they wouldn't mind!

Then, start up Deskmate and highlight the TELECOM bar and press <ENTER>.

You will be confronted with a page of settings which may seem meaningless, but they are important!

On the first line of the settings page you are prompted if you are using an autodial modem or a manual dial modem.

Select YES by moving the cursor onto YES and press <ENTER>.

You will then be faced with a blank page with four options at the bottom. They only one you will need to set up is COMPUTER dialing (Option F2). Press F2.

Set the screen so it looks like this:

DELAY: 1 (F7) 1
SEND: ATDP (F3) ATDP
then press F12 (twice) you will return to the main set up menu.

Set the BAUD rate to either 300 or 1200 (depending on which number you dial with AUSTPAC)

Set Data word length to 8.

Parity=NONE
Number Stop Bits=1
XON/XOFF=ON

and the rest set to OFF.

When that is done press F5 to go into Terminal Mode and press F8 to dial the number.

The modem should then dial the number you put in and connect you! Good luck!

Deon

Dear Alex

I recently purchased one of your Best of #8 - 16K Games on tape. The results are ...
* 50% of the games, my kids cannot get,
* 25% they have trouble getting off tape,
* 25% they can load and play.

Most of the games indicate an I/O error, which means a bad tape. My kids are sick and tired trying to get these games - what do you suggest?

Also on page 47 of the June 1987 Softgold issue, there is a graphics program called "Skull", for a 16K ECB (which my computer is) CoCo.

My daughter typed in the program - she got as far as line 163 which is about 75% of the program when she got an OK error (which means an Out of Memory error).

So she cleared memory and started again - still the same problem came up (on line 163).

Why is this so, when the computer has been suited to work on a 16K ECB CoCo?

James Peel
Morwell, VIC

James,

With the Best of #8 - 16K games, we suggest you do the following:

- * check tape connections
- * check volume - setting of 7 to 8 is good, as opposed to 5 - 6 that the Tandy manual states.

- * check that tape mechanics are clean - ie clean head, pinch roller (black roller on right of head), and erase head (left of head) have been cleaned with an alcohol (Tandy sell a liquid called "Professional Head Cleaner" - top stuff!) every 10 working hours.

- * (the following is an extremist idea ...) check the azimuth of the head to make sure it is at exactly 90 degrees level.

If trouble still persists and CoCo doesn't want to read the tape, then send the tape back with a note saying "Hey, my CoCo doesn't want to talk to my tape - please replace" as well as the symptoms.

When we receive such a tape a new tape is sent out and the offending tape checked.

Regarding "Skull" - the program should work perfectly! We have had programs thrice (three times) the length fit into a 16K ECB CoCo!

Before you type any program, make sure the following is done:
* Turn off your CoCo, wait for 15 seconds and turn your CoCo on again.

* Type PRINT MEM - you should get something around the area of 8848.

The first suggestion is the best way of clearing your CoCo's memory. Sure, there are other ways of clearing your CoCo memory, but this is the most effective.

To reduce "Skull" in length even more, delete (or leave out) the following lines: 0, 1, 2, 3, 4, 5, 6, 7, and 8 - these are either REMark lines or submission numbers, both of which you don't need in the running of the program.

Try that, and write me a letter to say how you went.

*

Dear Alex

I have just typed in the "Nuthacker" program which I am finding very interesting. However I would like to ask some questions about it. In listing 4, is line 1020 correct as printed?

Also in listing 2, lines 1045 to 1400 are repeated.

I would find it helpful to have more instructions, but I presume the command words are in listing 2, line 24 - but they need disentangling!

In the September "Softgold", page 17, in connection with the letter from Kim Hassall, would it be worth repeating instructions on how to deal with I/O errors using the CCR81 tape recorder?

I have a small screw driver, and often I find it necessary to adjust the head, as tapes can vary considerably, and it does not take much to throw things out. I now use a disk drive, but still have some material on tape, and it is easy to make a small adjustment.

I think I made this suggestion on the bottom of my review form, but as I was writing anyway, thought I'd spell it out a little.

THE Rev. John A. Ford
Junee, NSW

John,

G'day!

Yes, the REMark in line 1020 in listing 4 can be left out as well as everything after the REM. This is probably something

Peter tried but didn't like and settled for something better - it wasn't deleted when Pete finished debugging his program.

And yes, lines 1045 to 1400 are repeated, mainly because it was a paste-up error.

And (finally) yes, the instructions (or commands) are to be found in listing two somewhere ... you didn't think getting the commands for an adventure was that easy, did you?

Regarding "adjusting the azimuth of the head in your CCR-81 recorder" - if one could do a tutorial on exactly what to do, it'd be great for people such as James Peel (see above letter) and many others I know.

Gee, it'd be really appreciated if someone could write an article on such a subject, right John?

And no, repeating the other instructions on handling CCR-81 I/O errors aren't r-e-a-l-l-y necessary ...

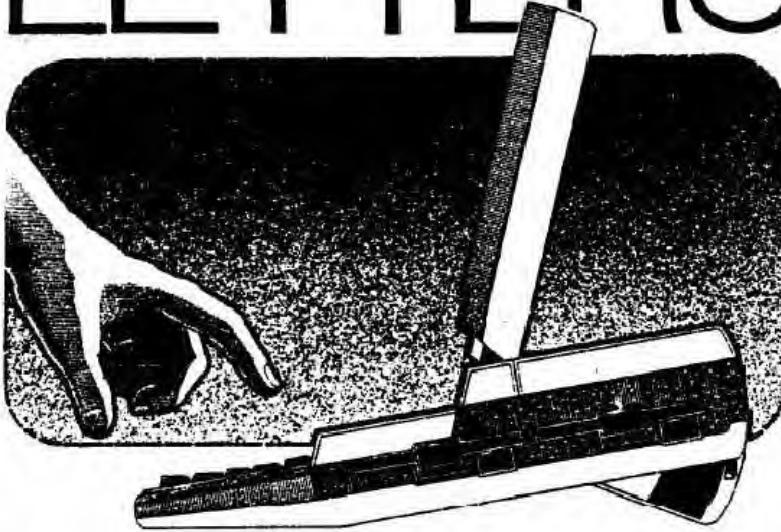


Correspondence for
THE OH ZONE should
be addressed to
either ALEX, CoCo
problems, and DEON,
T1000/IBM hassles.

Our address is:
THE OH ZONE,
PO Box 1742,
Southport, Q,
4215.



LETTERS



Dear Graham,

I am one of those lucky fathers who bought a CoCo 3 and disk drive to give to his son on his seventh birthday.

My boy, Shane, really enjoys using his computer, the disk drive has helped enormously there. In fact, the first disk I purchased was "Best of CoCoOz #11" with Bob Horne's absorbing (for my son) "Chatwin Manor".

Another reason I bought the CoCo was so that I could get to use it. Our deal is, Shane uses the computer, and I learn about it and type in the programs.

Eventually I will get a monitor - the portable TV gets moved too much.

Being a new user of a computer, I have discovered there is a big difference between learning BASIC, and understanding a writer's program. I enjoy most, those programs that are well documented, and the writer clearly states what the program is doing, ie which lines perform a specific task, what the variables represent, clearly REMARKed subroutines, etc.

I have found that without those comments some programs are difficult to follow.

I hope one day I will be able to contribute to your (great) magazine. Until then, I have a lot of learning, understanding and enjoying to do.

Perhaps you could coerce some of your more accomplished writers to turn their

submissions into mini-tutorials.

David Morton
Condobolin NSW

David,

Thank you for your letter. It's nice to know that there are other users in Condobolin, besides Ross and Chris.

We are attempting to make the magazine much more of a teaching magazine than we've been able to do in the past.

Already a number of our authors present their programs the way you suggest - for which we thank them - and we hope their example will be followed by others in the future.

Graham

*

Dear Graham,

After reading a back copy of a July 1986 Rainbow Magazine, I saw a program by Bob Ludlum called Music!.

I would like to have the updated version but do not want to buy a Rainbow on disk as I already have typed up many of the programs. Could you send me a printout of the updated version of MUSIC!, or alternatively, if you let me know the cost to tape onto a disk and post to me I could send a disk to you.

Marc Peake,
Oaklands Pk. SA.

Marc,

The program you require is

unavailable from us, due to the expiry of our arrangement with Falsoft, Inc in the U.S.

However, I understand that Robbie Dalzell of the Noarlunga User Group has some second-hand copies of some Rainbow magazines available. He may be able to help you.

Graham

*

Dear Graham,

I really enjoyed the conference. I am sure that all the work you, Karen, Alex and crew put into it really benefitted us all.

Hopefully next year Dad and I will make it up to the Gold Coast for CONF'88.

Thanks again for the tapes.

Odette Seccombe,
Roseville NSW.

P.S. There were two Sydney people at Conf'87, Odette and I!

Compliments on a GREAT CONFERENCE - a credit to you all. Really enjoyed the talk on Viatel - all I've got to do now is save up enough money to upgrade my modem (after I get FORTH from John Redmond)

John's talk really was superb! But I don't need to tell you that.

Roger.

Roger and Odette,

Thank you for your encouragement.

It is true that John's work needs no introduction to anyone, nevertheless it's also true that it's nice to encourage people such as John from time to time.

We enjoyed your company too, we hope Odette doesn't get sick next year!

Graham

*

Dear Graham,

Several weeks ago I sent you a letter asking several questions re. OS9 level 2.

Since then I have used a very rare procedure to answer several of those queries - I read the instruction book!! (Seriously though, I do have good reasons for having not seen these areas before - in true form, Tandy put some of the information in some VERY obscure places!!).

Anyway I now have the answers to all but the question re. reproducing sound through the OS9 system.

If possible could you refer that one to someone who can tell me? Thanks.

Now, to a couple of newies. I upgraded my CoCo 3 to 512K with the PJB upgrade from Paris Radio and with it received a disk of Public Domain programs.

Unfortunately, being Public Domain there are no instructions available and I have no idea what they do or how to use them. Can anybody help? The programs included are:

```
* KMODE.BIN    * KMODE.DOC
* MLGEN.BAS    * MTADD.TXT
* CNFG43.BAS   * MTERMS.BIN
* RO.SRC       * CCRDISK.SRC
* RAMD512K.DOC * RAMDSK.BIN
* RAMDSK.DOC   * RAMMER3.OS9
* RDISK.CC3    * SPOOLER3.BAS
* SPOOLER3.BIN * SPOOLER3.DOC
* EIGHT28.BAS
```

Barry Sidebottom
Sunbury Vic.

Barry,

All the files above with the ".DOC" and ".TXT" extension are instructions files you can read by typing:

LIST <filename>.<ext>

.The only sound that Alex has found in OS9 level 2 so far is by typing 'DISPLAY 07' which produces a short 'beep'.

Graham

*

Dear Graham,

First of all I am looking for software that I can use to put borders all round a letterhead and save to disk or tape.

My computer is a CoCo 3.

Is there anything in the best of CoCoOZ #3 Utilities? I know you say that some programs do not work on the CoCo 3 so I will wait for answer.

Graham, when reading letters in the September edition of Softgold I read Barry Sidebottom from Sunbury Vic.

Well my answer to Barry is he should pack up shop and move to NSW or he should try going to some of the other computer stores and see what service you get from them.

Try buying a fuse.

I know that not all Tandy managers have 100% computer knowledge, but I think they all try to do their best, as for waiting for goods I waited for 5

months for my RGB colour monitor, but my Tandy Store lent me the one out of the showroom.

Anyhow my last advise is that if you find something that you can pass back regarding your equipment that will help others please do, you can also gain from somebody that has passed their knowledge back to their Tandy Store.

Arthur Williams
Harrington NSW.

Arthur,

Harry Hoffmann has written a very nice little border program which will be in an upcoming CoCo magazine.

The program prints a border on A4 paper, but one could modify the program for longer or shorter paper length. Also, you can design any pattern you like, by altering the CHR\$ values within the program.

Thank you too, for your comments re the Tandy stores. No-one is perfect but I am convinced that these people try their best to help.

Graham

*

Dear Graham and Crew,

I just have to share this feeling of goodwill towards Tandy and their Maddington branch owner/ manager Pat Drennan.

My story:- For starters, I live in a quite isolated little bay, half way between Perth and Geraldton, Western Australia.

One of the drawbacks of this type of life is the lack of service backup to almost everything purchased from the city.

However, the recent service I received has altered my opinion.

What happened:- My CoCo 3 512K lost its ability to access OS9 Level 11. All ordinary programs seemed to work. A few MAYDAY panic calls to Pat resulted in the conviction that the HIGH RAM chips had failed.

Problem #1:- Solved when son-in-law, enroute from Geraldton to Perth, offered to drop my CoCo 3 into Pat on Thursday.

Problem #2:- Solved when Pat immediately posted me a replacement machine. Australia Post gets a pat on the back here: the replacement arrived here Friday (yes next day).

Truly this is excellent service from all concerned.

The big joke between son-in-law and Pat re. MY SEVERE, VIOLENT WITHDRAWAL SYMPTOMS re. not being able to have my daily fix could have expedited the replacement computer, but I prefer to think it due to Pat's attitude.

Backup/Service of this quality is very, very rare within Australia, and Backup/Service of this quality should be acknowledged.

Customer satisfaction = customer loyalty = a satisfied loyal customer is probably the best advertisement any Salesperson or any store can have.

Just thought I'd pass on this JEM performed by our PAT.

G.P. (Ringer) Levis,
Jurien. W.A.

P.S. You can include my Viatel Number in the "Some Tandy Users on Viatel" list. Who knows!! There are sure to be other isolated users over here who get stuck for a little encouragement.

Gordon,

Is Pat the only store manager Tandy have in Western Australia?
Graham

*

Dear Graham,

First subject:

I read in a letter in September's issue of Softgold Magazine that your correspondent Barry Sidebottom had lost his collection of Australian Rainbow Magazines. I don't know how far back his collection went but I may be able to help him.

I have a limited number of back issues retained from when I distributed the magazines in the Noarlunga area. If he cares to contact me, I would be happy to help him recoup some of his losses for cost of postage and packaging.

Second subject:

Further to the letter from Kim Hassall in the 'DR CoCo' section of the same magazine. I would like to add something to the very comprehensive answer given.

In future when copying programs from magazines it is good practice to omit any high speed POKEs until the program has been fully entered and

debugged. Missing them out does not adversely affect the program. Once everything is working properly they can be added.

I usually mark the position where they appear with a hi-lite pen so as to be able to find them easily for re-entry.

Robbie Dalzell
Port Noarlunga, SA

Robbie,

Thanks for that advice.

A comprehensive list of PEEKs and POKEs for the colour computers 1, 2 and 3 will appear in January 1988's Australian CoCo Magazine along with quite a quantity of other reference material.

Users who do not have ready access to information of this nature would be well-advised to make sure they obtain a copy of that magazine.

Graham

*

Dear Graham,

I have just received my first copy of your magazine and would

like to enter the graphics competition shown on page 62. My computer is a CoCo 2 with cassette and a DMP-100 printer.

As I have no details about previous competitions, could you please send more information on how to enter, what to send you, etc.

Chris Rowe
Mortlake, VIC

Chris,

When submitting any program to the magazine whether it be sent in on tape or disk, please save it three times and follow these three saves with a text file (if possible) which tells us about your program.

The graphics competition was going to end on the 7th of November 1987 but has been extended to the 7th of February.

All computer-drawn pictures - whether made on the Tandy 1000 or the CoCo are eligible, and as with the last graphics competition, the judges would give special consideration to animated scenes.

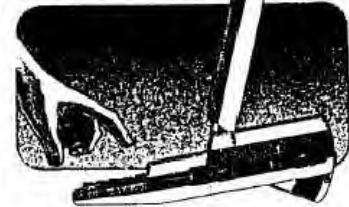
You send your submission to the submissions editor, Freepost

5, Southport, Queensland, 4215. Please note that mail to this address does not require a postage stamp and is to be used only for submissions.

Tapes and Disks sent by you will be returned after three months unless we need to keep them a little longer as reference material.

Graham

LETTERS



Our address is:
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MICO NEWS

Editor Jim Rogers

IN THE PAST two months, due to unforeseen circumstances, MICO has suffered, much to my own chagrin and disappointment but with this month's issue we are back on an

even keel and I hope we can now continue for many more months to come.

Even though, for a number of years now our old MC10 has been off the shelf, finished, dropped, redunidified and replaced - no not replaced - by Tandy, it still continues on its way.

Although many ex-Mac Teners have upgraded to a bigger machine there are, it appears, the same number of, or more, learners coming on.

This stands to reason when you realise that the ex-Mac Teners sell their machines to help purchase the new one and automatically create a new user somewhere.

It seems that the little MC10 will not wear out. Even if the symbols are worn off the keys with the constant use.

In one way it is sad to see those experienced users leaving us for the higher grade machines as we have lost the benefit of their expertise as well as the benefit of their inventiveness which produced so many advances for the MC10 but at the same time that is what the MC10 was produced for. A learning machine.

So it is only natural that those users, boys and girls, should progress to something more sophisticated.

Ed's note

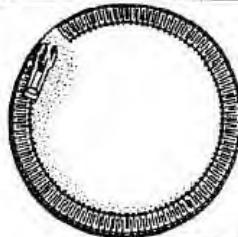
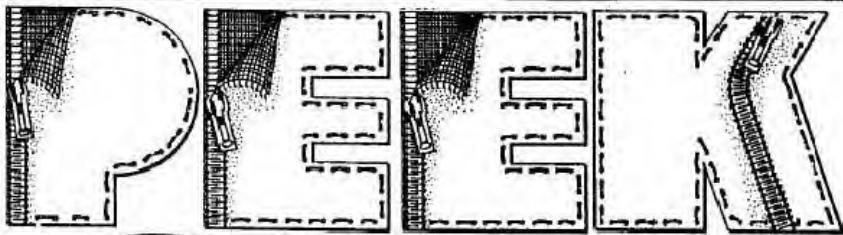
Also, many thanks to David Hill for the numerous programs he has submitted. I would like to add, David, by way of explanation on the difficulty we had over that tape you submitted and which I had to return to you as I was not able to get anything off it.

I eventually discovered that there were background voices and background music, and for some reason the MC 10 just would not pick it up.

I tried a variety of recorders to no avail and as a last resort I tried it out on a CoCo and up they came. Then by CSAVEing to a new tape I was able to transfer them to the to the MC 10.

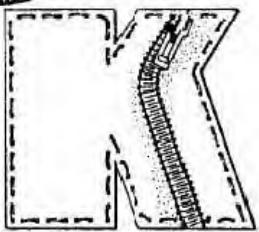
However I/O errors in Grafix didn't allow me to take that one off. This could be a warning to everyone to make sure you use a clean tape when CSAVEing programs.

Jim



MC-10
PROC

Brian says that this program may be a help to beginners. It lists all the POKEs and PEEKs, tabulates the CHR\$ and then gives a cursor and screen poke and a hangup test. If you don't follow the directions given you will crash.



The Listing PEEKPOKE:

```

9 REM:PEEKPOKE BY BRIAN GLASHEEN
1 POKE17626,137
3 POKE49151,64
5 FORG=1TO50:NEXTU
140 CLS0
150 FORX=57344TO57699
170 REM:ROM MAX. 65535
200 S=RND(255)
200 PRINT#PEEK(X),S
400 NEXTX
480 CLS0

```

```

485 PRINT"TOKEN SAMPLE"
490 FORX=57344TO57388
500 D=PEEK(X)
520 PRINTTAB(1)40D
525 FORU=1TO50:NEXTU
537 FORU=1TO5:NEXTU
540 HEXTM
590 CLS0
595 PRINTE265,"ROM RND SOUND TES
T"
600 FORX=57344TO57499
625 R=RND(2)
650 SOUNDPEEK(%),R
700 NEXTX
790 CLS0
795 PRINT"CHR$ SAMPLE"
797 FORY=1TO30:NEXTY
800 FORX=57344TO57499
810 PRINTTAB(15)CHR#(PEEK(X))
811 PRINTTAB(20)CHR#(PEEK(X))
812 PRINTTAB(10)CHR#(PEEK(X))
898 FORU=1TO5:NEXTU
900 NEXTC
900 PRINT"CHR$ TAB TEST"
981 PRINT"CURSER AND SCREEN POKE
TEST"
999 POKE49151,64
1000 PRINT"PRINT MEM:-PRINTMEM"
1050 FORU=1TO4000:NEXTU
1100 PRINT"HANG UP POKE TEST"
1110 PRINT"PRESS RESET IN 30 SEC
ONDS",THEN LIST"
1115 PRINT"NO,DON'T LIST:USE KEY
BOARD"
1117 PRINT"PRESS ENTER 7 TIMES T
HEN PRESS ANY OL' KEY"
1120 FORJ=1TO9000:NEXTJ
1125 PRINT"WAIT A TIC"
1126 FORU=1TO2000:NEXTU
1200 POKE49151,32
1300 LIST

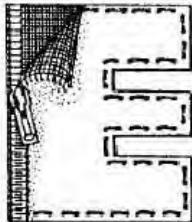
```

Φ

by

Brian

Glasheen



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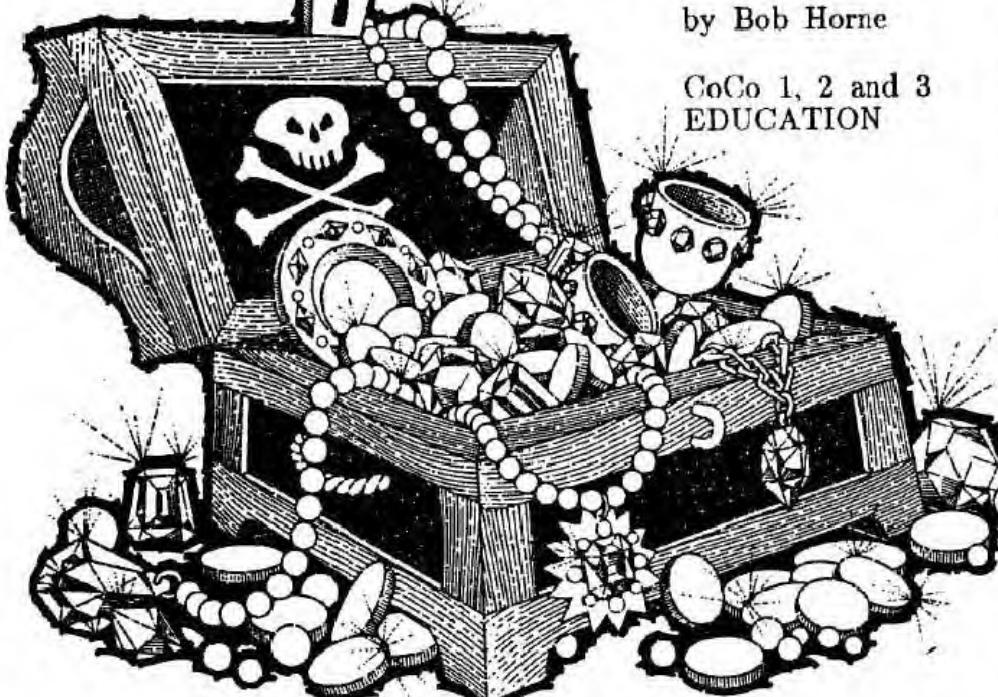
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by Bob Horne

CoCo 1, 2 and 3
EDUCATION



THESE TWO PROGRAMS - full names "Coordinates for CoCo 1 and 2" AND "Coordinates for CoCo 3" are based on a program and article by Steve Flynn.

This was originally published in U.S. Rainbow, May, 1985. If you are interested in programming, these articles at times contain little gems of programs that are worthy of development.

In the accompanying article, Steve often gives hints on how the program can be altered to suit your own requirements.

Whereas Steve in his program presented his grid on the text screen, I have put the grid on the graphics screen.

The original program numbered the "Y" axis from the top of the screen to the bottom. (i.e. with "0" at the top and "7" at the bottom). This may be acceptable in computer terms but is not according to the usual practice where "0" is at the bottom and "7" at the top.

So, I have set out the grid numbering in the accepted way.

A short tutorial is presented in each program. As the program progresses, just follow the directions at the bottom of the screen. Oh, don't forget to revise Cardinal points and compass directions before presenting the program to the class.

I have found that most users can find the treasure in 3 to 5 guesses. You may wish therefore to change the number of guesses allowed. (presently set at 7).

To do this:- In the CoCo 1 and 2 version, alter the value of CT in line 420. Also change line 630 to suit.

In the CoCo 3 version the lines to alter are 450 and 690.

A further alteration in the CoCo 3 version if you don't like the "NO" off-centre when a wrong answer is given is to replace line 440 with ...

```
440 X=CC:HDRAW"S4C4BM"+STR$(CC*2  
445)+"","+STR$(RR#16+24)+"U6DF4"  
U5DBR6HU4ER2FD4GL2"
```

You can also add the triple speed-up POKE65497,0 before drawing the HLINE's in program lines 170, 240, 550, 580 and 590.

After the line has been drawn add POKE65496,0 to get back to normal speed.

Listing One

```
1 REM*****  
2 REM* CO-ORDINATES *  
3 REM* AND ORDERED PAIRS *  
4 REM* BY BOB HORNE * FOR *  
5 REM* IPSWICH, Q * COCO1&2 *  
6 REM*****  
7 GOTO10  
8 SAVE"309:3":END'2  
9 GOTO20  
10 PCLEAR8:GOTO9  
11 IF PEEK(188)=14 THENPOKE248,5  
0:POKE249,98:POKE250,28:POKE251,  
175:POKE252,126:POKE253,173:POKE  
254,165:POKE410,126:POKE411,0:PO  
KE412,248:REM****DISABLE <BREAK>  
KEY*****  
20 CLEAR500:CLS  
30 DIMCH$ (58):FORX=0TO58:READCH$  
(X):NEXTX  
40 GOSUB590  
50 GOSUB610  
60 A=RND(-TIMER):PMODE4,1:COLOR0  
,5:PCLS  
70 A=RND(10)-1:B=RND(8)-1:CT=0:N  
Q=NQ+1:IF DS=0 THEN GOSUB190 ELS  
E FORZ=1TO4:PCOPY Z+4 TO Z:NEXTZ  
80 GOTO290  
89 REM***WORK OUT DIRECTION****  
90 PR$="":DRAW"CO":LINE(103,171)  
-(155,181),PSET,BF:IF CT=1 THEN
```

```

X1=10: Y1=180: C1=5: CS="CHANGE DIRECTION TO": GOSUB740
100 IF Y=B THEN130 ELSE IF Y>B T
HEN120 ELSE PR$=PR$+"NORTH"
110 GOTO130
120 PR$=PR$+"SOUTH"
130 IF X=A THEN160 ELSE IF X<A T
HEN150 ELSE PR$=PR$+"WEST"
140 GOTO160
150 PR$=PR$+"EAST"
160 X1=107: Y1=180: C1=5: CS=PR$: GO
SUB740: PLAY"O2L5T10AAAAFFAAA"
170 DRAW'CO': LINE(0,150)-(190,17
0), PSET, BF
180 GOTO80
189 REM*****SCREEN SET UP*****
190 COLOR0: LINE(30,0)-(217,7), PS
ET, BF
200 R=2: X1=55: Y1=6: C1=5: CS="F I
N D T H E T R E A S U R E": GOS
UB740: X1=56: GOSUB740: X1=27: Y1=16
:C1=0: CS="0 1 2 3 4
5 6 7 8 9": GOSUB7
40: Y1=148: GOSUB740
210 FORZ=7TOSTEP-1: Y1=(7-Z)*16+
25: X1=15: C1=STR$(2): GOSUB740: X1=
222: GOSUB740: NEXTZ
220 FORX=30TO219 STEP21: LINE(X,2
0)-(X,139), PSET: NEXTX
230 FORY=23TO150STEP16: LINE(27,Y
)-(221,Y), PSET: NEXTY
240 LINE(0,150)-(255,191), PSET, B
F
250 CIRCLE(233,171), 20, 5: PAINT(2
33,171), 5,5
260 X1=231: Y1=158: CS="H": GOSUB74
0: Y1=189: CS="S": GOSUB740: X1=216:
Y1=174: CS="V E": GOSUB740
270 DRAW'COBM233, 181U20NF3NG3D10
L10R20
280 DS=1: FORZ=1TO4: PCOPY Z TO Z+
4: NEXTZ: RETURN
289 REM****GET CO-ORDINATES*****
290 SCREEN1, 1: R=3: X1=12: Y1=160: C
1=5: CS="TYPE FIRST CO-ORDINATE (
0 TO 9) -": GOSUB740: IN$=INKEY$
300 IN$=INKEY$: IF IN$="" THEN300
310 IF ASC(IN$)<48 OR ASC(IN$)>5
7 THEN300
320 CC=VAL(IN$): X1=180: CS=IN$: GO
SUB740
330 X1=7: Y1=170: CS="TYPE SECOND
CO-ORDINATE (0 TO 9) -": GOSUB74
0: IN$=INKEY$
340 IN$=INKEY$: IF IN$="" THEN340
350 IF ASC(IN$)<48 OR ASC(IN$)>5
5 THEN340
359 REM****EVALUATE ANSWER*****
360 RR=VAL(IN$): H1=RR: X1=180: CS=
IN$: GOSUB740
370 CT=CT+1: PX=30+21*CC: RR=RR-7:
RR=ABS(RR): PY=23+16*RR
380 IF CC=A AND H1=B THEN440
389 REM****ANSWER WAS WRONG*****
390 FORX=1TO8: CIRCLE(PX, PY), X, 0:
NEXTX
400 PLAY"O2L50T5FFFFFFD1AAAAAAA
O2FFFFFF"
410 X=CC: X1=PX-4: Y1=PY+2: C1=5: CS
="NO": GOSUB740
420 IF CT=7 THEN530

```

```

DERED PAIR
710 PRINT#484, "PRESS enter TO CO
NTINUE."
720 IF INKEY$<>CHR$(13) THEN720
730 CLS: PRINT#262, "JUST A MOMENT
PLEASE.": RETURN
739 REM*****DRAW MESSAGES*****
740 POKE65495, 0: R=2: DRAW'C=C1: BM
"+STR$(X1)+" "+STR$(Y1)
750 FORI=1TO LEN(C$)
760 F=ASC(MID$(C$, I, 1))-32
770 DRAWCH$(F)+"B: R=R; "
780 NEXTI: POKE65494, 0: RETURN
789 REM*****CHARACTER DATA*****
790 DATA BR2, BR2UBU2U2BRBD5, BU5ND
BR3DBD4, BRUNLU3NLVRNUERD3NLNRDB
R, BRUNLREHL2URNUR2BD4, BR3NUBL3UE
3UBL3DBD4BR3, BRHENF2HEFGBD2REBD,
BU5BRRDQBD3BR2, BR2HU3EBRBDS, BREU
3HBD5BR2, BREUE3BD3NH3BDBR, BU3BR2
DNLNRDDBR
800 DATA BRUNRDRNUDGBU2BR2, BRBU2R
2BD2, BRRUDBR2, BUBRRBU2NL3NR2BU2
LBD5BR3, BRHU3ERFD3GLBR2, R2U5NLD5
R
810 DATA NR3UEREU2LLGBD4BR3, BUFR
EUHNLEUL3BD5BR3, BR3U5D3L3UE2RBD5
, BUFRUEUHL2U2R3BD5, BUNUFREUHLG2E
RBD5BR, BU4UR3D2G3BR3, BUNUFREUHLN
GHERFGBD3BR, BRREU3HLGDFREBD3, BR2
UBU2UBD4BR
820 DATA PR2URD2GBU5URLDBD3BR, BR2
H2UE2BD5BR, BRBUNR2BU2R2BD3, BR2U
H2BD5BR2, BR2UBUUREHL2BD5BR3,, U2E
R3U2ERFD4
830 DATA U3NR2U2R2FGFDGL2BR3, BUU
3ERFD3GLHBDDBR3, U5RF2DG2LB3, NR3
U3NR2U2R3BD5, U3NR2U2R3BD5, BUU3ER
BRBD3NLGHLHBDDBR3, U3NU2R3NU2D3, BR
U5BD5BR2, BUFEU4NRL2BD5BR3, U5D2RE
2G2F2D, NU5R3, U5F2NDE2D5, U5F3U3D5
840 DATA BRHU3ERFD3GLBR2, U5R2FDGL
2BD2BR3, BUU3ERFD3NHNFGLHBDDBR3, U5
R2FGL2F3, BUFRUEUHL2UERFBD4
850 DATA BRU5L3BD5, NU5R3U5BD5, BU
5D3FDRUEU3BD5, NU5E2NUF2NU5, UE2H2
BR3DGFD2, BU5D2FRD2NU2EU2BD5, NR3
UE3UL3BD5BR3

```

Listing Two

```

1 REM*****CO-ORDINATES *****
2 REM* CO-ORDINATES *
3 REM* AND ORDERED PAIRS *
4 REM* BY BOB HORNE * FOR *
5 REM* IPSWICH, Q * COCOM3 *
6 REM*****CO-ORDINATES *****
7 GOTO10
8 SAVE"309A:3": END' 2
10 CLEAR1000:CLS
20 ON BRK GOTO800
30 DIMA(14): A(1)=16: A(2)=11: A(3)
=32: A(4)=63: A(5)=27: A(6)=45: A(7)
=38: A(8)=45: A(12)=16: A(13)=52
40 GOSUB650
50 PALETTECMP: GOSUB670
60 A=RND(-TIMER)

```

```

70 HSCREEN2:FORZ=1TO13:PALETTEZ,
A(Z):NEXTZ:GOSUB190:CT=0:NQ=NQ+1
80 GOTO290
89 REM****WORK OUT DIRECTION****
90 HCOLOR4:HLINE(160,170)-(250,1
91),PSET,BF:HCOLOR3:HPRINT(0,22)
,"CHANGE DIRECTION TO ":"PR$="""
100 IF Y=B THEN130 ELSE IF Y>B T
HEN120 ELSEPR$=PR$+"NORTH"
110 GOTO130
120 PR$=PR$+"SOUTH"
130 IF X=A THEN160 ELSE IF X<A T
HEN150 ELSEPR$=PR$+"WEST"
140 GOTO160
150 PR$=PR$+"EAST"
160 HPRINT(20,22),PR$:PLAY"02L50
T10AAAFFFAAA"
170 HCOLOR4:HLINE(0,150)-(255,17
0),PSET,BF
180 GOTO80
189 REM****SET UP SCREEN*****
190 HCOLOR4:HLINE(80,0)-(230,7),
PSET,BF
200 HCOLOR3:HPRINT(10,0)," FIND
THE TREASURE":HCOLOR4:PR$=" 0
1 2 3 4 5 6 7 8 9":HPRINT
T(4,1),PR$:HPRINT(4,17),PR$
210 FORZ=7TO0STEP-1:RR=(7-Z)*2+
:HPRINT(3,RR),Z:HPRINT(34,RR),Z:
NEXTZ
220 FORX=51TO267 STEP24:HLINE(X,
18)-(X,134),PSET:NEXTX
230 FORY=20TO142STEP16:HLINE(Y,
Y)-(270,Y),PSET:NEXTY
240 HCOLOR4:HLINE(0,150)-(320,19
1),PSET,BF:A=RND(10)-1:B=RND(8)-
1
250 HCIRCLE(283,171),22,13:HPAIN
T(270,171),13,13
260 HCOLOR3:HPRINT(35,19),"N":HP
PRINT(35,23),"S":HPRINT(33,21),"W
":HPRINT(37,21),"E"

```

```

270 HDRAW'C3BM283,181U20NF3NG3D1
0L10R20
280 RETURN
289 REM****GET CO-ORDINATES****
290 HCOLOR3:HPRINT(1,19),"TYPE F
IRST CO-ORDINATE 0 - 9 >:INS=IN
KEYS
300 INS=INKEYS:IF INS="" THEN300
310 IF ASC(INS)<48 OR ASC(INS)>5
7 THEN300
320 CS=INS:HPRINT(31,19),CS:CC=V
AL(C$)
330 HPRINT(0,20),"TYPE SECOND CO
-ORDINATE 0 - 7 >:INS=INKEYS
340 INS=INKEYS:IF INS="" THEN340
350 IF ASC(INS)<48 OR ASC(INS)>5
5 THEN340
360 HPRINT(31,20),INS:RR=VAL(INS
):G1=CC:H1=RR
370 CT=CT+1:X1=51+24*CC:RR=RR-7:
RR=ABS(RR):Y1=20+16*RR
379 REM****EVALUATE ANSWER*****
380 IF CC=A AND H1=B THEN470
389 REM****ANSWER WAS WRONG*****
390 CO=5:FORZ=0TO8:HCOLOR CO:HLI
NE(X1-4-Z,Y1-Z)-(X1+4+Z,Y1+Z),PS
ET,B:CO=CO+1:IF CO=8 THEN CO=5:N
EXTZ ELSE NEXTZ
400 K=6:FORZ1=1TO10:FORZ=5TO7:PA
LETTEZ,A(Z):FORZ2=1TO10:NEXTZ2:N
EXTZ:K=K-1:IF K<5 THEN K=7:NEXTZ
1 ELSE NEXTZ1
410 HCOLOR RND(4)+4:HLINE(X1-12,
Y1-8)-(X1+12,Y1+8),PSET,BF
420 PLAY"02L50T5FFFFFFFO1AAAAAAA
U2FFFFFF"
430 FORZ=5TO7:PALETTEZ,A(Z):NEXT
Z
440 X=CC:CC=CC*3+6:RR=RR*2+2:HC
OLOR4:HPRINT(CC,RR),"NO"
450 IF CT=7 THEN580
460 Y=H1:GOTO90
469 REM****ANSWER WAS RIGHT*****
470 HCIRCLE(X1,Y1),20,8:HPAINT(X
1,Y1),8,8
480 FORZ=1TO10
490 X2=X1-12+RND(22):Y2=Y1-12+RN
D(22)
500 FORZ2=1TO4:HCIRCLE(X2,Y2),22
,13:HCIRCLE(X2,Y2),5,8:NEXTZ2,Z
510 FORZ=1TO10:FORZ1=1TO10:NEXTZ
1:FORZ2=1TO8:PALETTEZ2,RND(63);P
ALETTE13,RND(63);NEXTZ2,Z
520 FORZ=1TO4:PALETTEZ,A(Z):NEXT
Z:PALETTE13,A(13)
530 PALETTE8,A(8):CC=CC*3+5:RR=R
R*2+2:HCOLOR4:HPRINT(CC,RR),"YES
":FORZ=1TO20:PALETTE4,RND(63):FO
RZ1=1TO10:NEXTZ1,Z
540 PALETTE4,63:PLAY"03T2L10CCGG
AAL5G"
550 HCOLOR4:HLINE(0,150)-(260,18
5),PSET,BF
560 HCOLOR3:HPRINT(1,20),"CONGRAT
ULATIONS. YOU MADE IT IN":HPRINT
(0,21),CT:HPRINT(3,21),"MOVE":IF
CT=1THEN HPRINT(7,21),".":ELSE
HPRINT(7,21),"S."
570 GOTO590
579 REM****THAT'S 7 GUESSES*****
580 HCOLOR4:HLINE(0,150)-(260,19
1),PSET,BF:HCOLOR3:HPRINT(0,19),
"SORRY, THAT WAS 7 MOVES.":HPRIN
T(0,20),"THE CORRECT ANSWER WAS
":HPRINT(22,20),A:HPRINT(24,20),".
":HPRINT(24,20),B
590 FORZ=1TO2000:NEXTZ:IF NQ=10
THENHCOLOR4:HLINE(0,150)-(250,17
5),PSET,BF:HCOLOR3:HPRINT(0,23),
"NEXT PLAYER - press enter.": EL
SE CT=0:GOTO70
600 PLAY"T502L8CCGG03AAL4G"
609 REM****GET NEXT PLAYER*****
610 INS=INKEYS
620 IF INS<>CHR$(13) THEN620
630 NQ=0:CT=0:HSCREEN0:PALETTE C
MP:GOTO50
639 REM*****TITLE SCREEN*****
640 PALETTE12,62:PALETTE13,1
650 PALETTE12,62:PALETTE13,1:VID
TH32:CLS:PRINT@134,"THE PIRATES
TREASURE":PRINT@202,"BY BOB HORN
E":PRINT@264,"FROM AN IDEA OF":P
RINT@331,"STEVE BLYN"
660 FORZ=1TO2000:NEXTZ:RETURN
669 REM****INSTRUCTIONS*****
670 WIDTH40:ATTR0,1:CLS3:ATTR3,2
:FORZ=1TO5:PRINT:NEXTZ:ATTR2,4:P
RINT:LOCATE0,5:PRINT:PRINT'Peter
Pirate has buried his treasure
somewhere on this island."
680 ATTR0,6:PRINT:PRINT"Unfortun
ately, on his map, he has used
invisible ink to mark the spot w
here thetreasure is buried."
690 PRINT:ATTR0,7:PRINT:PRINT"You
will have 7 chances to pick th
e co-ordinates of the spot w
here he has buried the treasur
e.":PRINT
700 ATTR3,2:LOCATE0,20:PRINT:PRI
NT" Press ";:ATTR2,1,B:P
RINT"ENTER";:ATTR3,2:PRINT" to c
ontinue.":PRINTSTRINGS(39,32);:L
OCATE33,21:INS=INKEY$ 
710 IF INS<>CHR$(13) THEN710
720 ATTR0,1:CLS3:ATTR3,2:FORZ=1T
04:PRINT:NEXTZ:ATTR2,4:PRINT:PRI
NT"When using co-ordinates, the
horizontal number is always cons
idered first.":PRINT
730 ATTR0,6:PRINT"The vertical n
umber is considered next.":PRINT
740 PRINT"Thus, co-ordinates are
usually entered in this manner
:- (9,3)":PRINT
750 ATTR0,7:PRINT:PRINT"This pa
ir of numbers means go across 9
and up 3."
760 PRINT:PRINT"A pair of number
s like this is also known as
";:ATTR0,5,B,U:PRINT"an ORDERED
pair";:ATTR0,7:PRINTSTRING$(56,
32);770 ATTR3,2:LOCATE0,21:PRINT
:PRINT" Press ";:ATTR2,1
,B:PRINT"ENTER";:ATTR3,2:PRINT"
to continue.":PRINTSTRINGS(39,32
);:LOCATE33,22:INS=INKEY$ 
780 IF INS<>CHR$(13) THEN780
790 RETURN
800 ATTR0,1:PALETTECMP:END

```

PLANE GAME

By Bob Horne

EDUCATION
ANY MODEL COCO

PLANE GAME IS A VERY simple game which I wrote to demonstrate and teach various techniques in programming to the young members of a user-group which meets at my school twice a month.

The directions are very simple - just press the spacebar to fire.

The graphics screen used (128 points by 128 points) gives an interesting effect.

If you wish to change the number of turns you have, just change the "IF N>20" in line 520 to whatever you wish best keep it to a maximum of 99 though or you will have to alter the scoring routine (lines 470 - 510).

The Listing:

```

1 REM*****PLANE GAME *****
2 REM* BY BOB HORNE *
3 REM* *****
4 REM*****PLANE GAME *****
5 GOTO20
6 SAVE"306D:3":END'2
19 REM****CREDIT SCREEN HERE*****
20 POKE31000,0:CLS0:FORA=1TO32:A
$=A$+CHR$(127+16*RND(8)):NEXTA
30 A=1
40 PRINT@192,"          PLAN
E           ";
50 PRINT@256,"    PRESS <ENTER>
TO START.   ";
60 PRINT@160,MID$(A$,A,32-A)+MID
$(A$,1,A);
70 PRINT@224,MID$(A$,A,32-A)+MID
$(A$,1,A);
80 PRINT@288,MID$(A$,A,32-A)+MID
$(A$,1,A);
90 A=A+1:IF A=31 THEN A=1
100 IF INKEY$<> CHR$(13) THEN GO
197 REM***POKES FROM A LETTER****
     ***BY KEITH CAMPBELL****
     ***HOT COCO, OCT. 1983****
198 REM***SET VDG ETC. AND*****
199 REM****DRAW SCENERY*****
200 PMODE1,1:PCLS:SCREEN1,0
210 POKE65473,0:POKE65474,0:POKE
65476,0:REM***SET VDG CHIP*****
220 POKE185,16:REMSET BASIC FLAG
230 POKE65314,128:REM***ACTS AS
SCREEN COMMAND****FOR THE OTHER
COLOR SET USE POKE65314,136*****
240 CLEAR200,31000:DIMCH$(10),P
L(3),PB(3):FORX=0TO9:READCH$(X):
NEXTX
249 REM***DRAW AND GET PLANE****
250 DRAW"S4C3BM10,10NU2R7"
260 GET(0,4)-(20,14),PL
270 PCLS
279 REM****DRAW MOUNTAINS*****
280 DRAW"C3BM0,90R127H10L15H10L5
H15G35L7H12M0,90"
290 PAINT(15,85),3,3:PAINT(85,85
),3,3
299 REM*****ROAD*****
300 DRAW"C4":LINE(30,92)-(0,127)
,PSET
310 DRAW"BM30,92L30"
320 PAINT(15,95),4,4
330 LINE(37,92)-(127,127),PSET
340 DRAW"BM37,92R92"
350 PAINT(55,95),4,4
359 REM***LINE CENTRE OF ROAD***
360 DRAW"C2BM34,94M40,102"
369 REM*****DRAW SUN*****
370 CIRCLE(6,6),6,2:PAINT(6,6),2
,2
379 REM*****SCORE BOX*****
380 DRAW"C2":LINE(25,102)-(75,12
7),PSET,BF
390 DRAW"S4C2BM86,68R4L2U":N=0:D
RAW"S16C3BM45,125"+CHS(0):SOUND1
0,1
399 REM*****MAIN LOOP*****
400 Z=64:X=0:N=N+1:Y=16+RND(10)*
2:DRAW"S4C3BM2,"+STR$(Y+4)+"NU2R
7":ST=RND(2):IN$=INKEY$
410 IN$=INKEY$
420 X=X+ST:IF X>107 THEN X=107:
PUT(X,Y)-(X+20,Y+10),PB:GOTO520
430 PUT(X,Y)-(X+20,Y+10),PL
440 IF IN$<>CHR$(32) THEN 410
449 REM*****GUN FIRED*****
450 PSET(88,Z,2):Z=Z-2:RESET(88
,Z+2):IF Z<4 THEN Z=64:GOTO410
ELSEIF PPOINT(86,Z-2)<>3 THEN 42
0
459 REM*****HIT PLANE*****
460 FORT=1TO10:CIRCLE(86,Z-2),T,
RND(3)+1:NEXTT:PLAY"01V31T255L25
5CDEGFABCAGDEFBCDFEGABCAGBCE":FO
RT=1TO10:CIRCLE(86,Z-2),T,1:NEXT
T
469 REM*****NEW SCORE*****
470 DRAW"C2":LINE(25,102)-(75,12
7),PSET,BF:SC=SC+1:SC$=STR$(SC):
SC$=RIGHT$(SC$,LEN(SC$)-1):IF LE
N(SC$)=1 THEN X1=45 ELSE X1=35
480 DRAW"S16C4BM"+STR$(X1)+"",125
"
490 FORT=1TO LEN(SC$)
500 VS=MID$(SC$,T,1):W=ASC(V$)-4
8:DRAWCHS(W)+"BR2"
510 NEXTT
520 FORT=1TO1000:NEXTT:IF N>20
THEN SOUND100,1:GOTO400
539 REM*****GAME OVER*****
540 CLS:PRINT@171,"GAME OVER"
550 PRINT@265,"YOUR SCORE"SC
560 IF PEEK(31000)<SC THEN POKE
31000,SC:PRINT@388,"YOU HAVE THE
HIGH SCORE." ELSE PRINT@393,"HIG
H SCORE";PEEK(31000);
570 PRINT@482,"PRESS <ENTER> TO
PLAY AGAIN":IN$=INKEY$
580 IN$=INKEY$:IF IN$<>CHR$(13)
THEN 580 ELSE 200
589 REM****DATA FOR NUMBERS****
590 DATA BH3UERFD3GLBR2,R2U5NLDS
R,MR3UEREU2L2GBD4BR3,BUFREUHNLEU
L3BD5BR3,BR3U5D3L3UE2RBD5
600 DATA BUFRUEUHL2U2R3BD5,BUNUFRE
UHLGU2ERBD5BR,BU4UR3D2G3BR3,BUNU
FREUHLNGHERFGBD3BR,BUFREU3HLGDPR
EBD3

```

-Φ-

SUBMITTING YOUR WORK

Ah! So you've finally finished that program? And you say to yourself, "What a great program that would make for CoCo Magazine/Softgold Magazine!"

And so you wonder to yourself, "How am I going to send this program in to the magazine?". Some time goes by and you suddenly realise, "Hey, there's an article in this month's magazine about submitting your work. I'll read through that and maybe that'll help me."

So you rip the magazine out of your stack of other CoCo/Softgold magazines and read the article on how to submit your program.

It reads ...

"... we accept programs stored on both tape and disk ONLY along with a hard copy of the program(s) (optional only; we use it here as a reference to see what the program is/does) and suitable instructions.

Saving to Tape

Each program would be best saved three times with the last save being in ASCII. The tapes we recommend you use are either a C30 or less (the reason for that is that tapes longer than C30 have a tendency to tear).

It'd be even better if you could include some instructions along with the program, either as a separate program or in the wordprocessors listed below.

Saving to Disk

With disk, you'd be best to save it three times with the last save being in ASCII. Also, the extension name for the second and third copy should be different, so to distinguish the three copies. A simulation is given below.

'... I have just saved 3 copies of a program called "HORSE". The directory listing would be:

```
HORSE BAS 0 B 3
HORSE 1 0 B 3
HORSE 2 0 A 3'
```

Any instructions could be saved in the same system using either a program or in the wordprocessors listed below.

Wordprocessors we use.

Here is a list from our most preferable wordprocessors to the drastic measure one could take to tell us how your program works.

1. Telewriter/Telepatch
2. Scriptit
3. PenPal
4. VIP Writer
5. Any form of data file.
6. Instructions written in a separate program."

"Oh wow!", you think to yourself as you read it with awe and astonishment. So you go about your busy little way saving your program and instructions to tape or disk. Then you say to yourself, "Where do I send it?"

You read the article on ...

"... any articles and programs should be sent to this address:

Submissions Editor,
Freepost 5
PO Box 1742,
Southport, Qld, 4215

All mail to this address need not be paid for.

All tapes and disks received will be returned after three months in case we need to refer to something or re-print something."

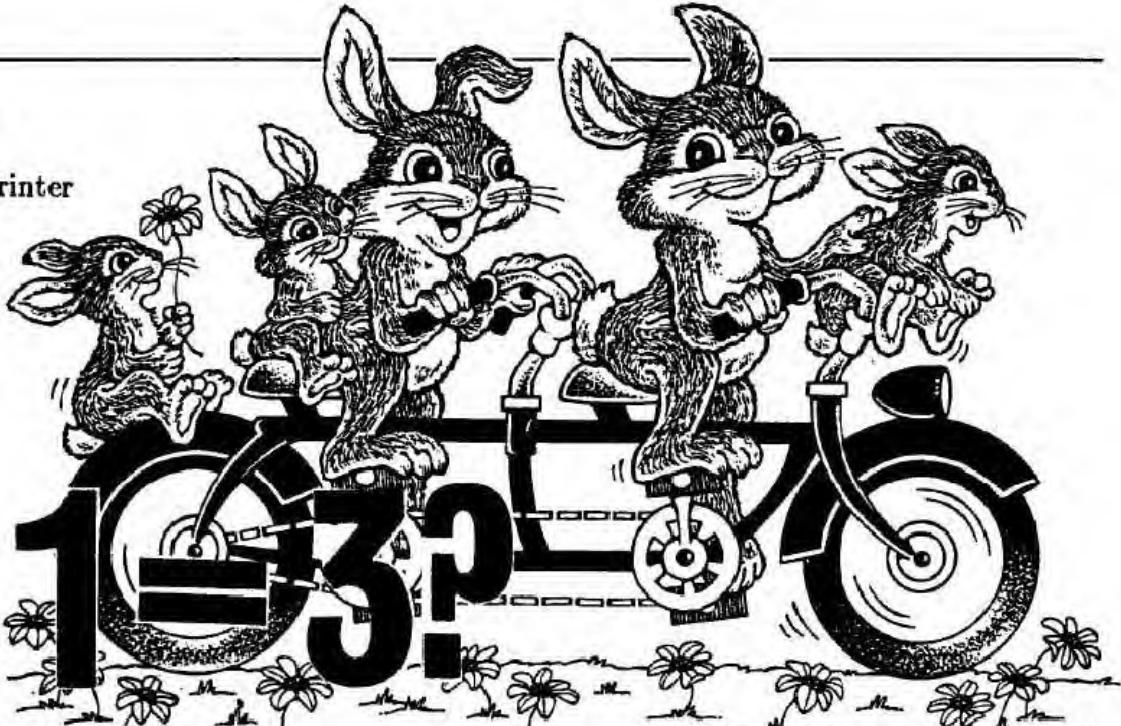
So place your tape/disk along with your hardcopy of the listing in a postpack (or suitable wrapping) and pop it in the mail.

All done!!

by Bob Horne

32K CoCo + printer EDUCATION

1 X 1 = 3?



TABLES14 WILL PRINT out a sheet of little problems on which your class can work. You may choose a sheet of problems based on only one type (this is divided into various sub-types in most cases) or you may choose a mixture of all the types.

The printer codes are for a Tandy DMP-105.

I have documented them in the program with REM's for conversion to other printers.

The Listing:

```
1 REM*****  
2 REM* TABLES14 *  
3 REM* BY BOB HORNE *  
4 REM*****  
5 GOTO10  
6 SAVE"309F:3":END'2  
10 CLS:PRINT@260,"TABLES GENERAT  
ION SHEET":DIMAN(3,30):FORZ=1TO1  
000:NEXTZ:CLS:PRINT"WHICH GENERA  
L TYPE WOULD YOU LIKE PRINTED  
?"  
20 PRINT"1)A+B=C+D","2)A*B=C*D",  
"3)A*B=C+D","4)A-B=C+D","5)A-B=C  
-D","6)7+7+7-7+7=?","7)(A*B)-C=D  
","8)3,6,9,..."  
30 PRINT"9)A*B/C=D","","10)(A*B)+(C  
*B)=(...*B)","11)A-(B+C)=D","12  
)A-(B-C)=D","13)A*B+C-D=E","14)A  
-(B*C)=D","15)ROMAN XXIX = ... (T  
O 99)", "16)A MIXTURE."  
40 PRINT:INPUT"TYPE A NUMBER (1-  
16) AND PRESS <ENTER>";A$:T=VAL  
(A$):IF T<1 OR T>16 THENPRINT:PR  
INT"SORRY. OUT OF RANGE.":FORZ=1  
TO1000:NEXTZ:RUN  
48 REM* PRINTER CODES *
```

```
49 REM* CHR$(27)CHR$(14) SET  
DOUBLE WIDTH * CHR$(27)CHR$(15)  
TURN OFF DOUBLE WIDTH * CHR$(15)  
TURN ON UNDERLINE * CHR$(14)  
TURN OFF UNDERLINE *  
50 CLS:PRINT#-2,TAB(0);CHR$(27);  
CHR$(14);"NAME";CHR$(27);CHR$(15)  
>;CHR$(15);STRINGS$(50,32);CHR$(1  
4);  
60 SH=RND(-TIMER):SH-TIMER:PRINT  
#-2,"SHEET #";SH:PRINT#-2  
70 PRINT#-2,TAB(10);CHR$(15);"LI  
ST A";CHR$(14);TAB(39);CHR$(15);  
"LIST B";CHR$(14);TAB(68);CHR$(1  
5);"LIST C";CHR$(14):CLS  
80 FORX=1TO24  
88 REM* PRINTER CODES *  
89 REM* CHR$(27)CHR$(16)CHR$(0)  
CHR$(160) PRINTS 1/3 ACROSS PAGE  
CHR$(27)CHR$(16)CHR$(1)CHR$(64)  
PRINTS 2/3 ACROSS PAGE*****  
90 FORY=1TO3:PRINT@270,(X-1)*3+Y  
100 IF Y=1 THENPRINT#-2,TAB(0);"  
"; ELSE IF Y=2 THENPRINT#-2,CHR$(  
27);CHR$(16);CHR$(0);CHR$(160);  
ELSEPRINT#-2,CHR$(27);CHR$(16);  
CHR$(1);CHR$(64);  
110 PRINT#-2,USING" ## " ;X;  
120 IF T=16 THEN U=RND(16) ELSE  
U=T  
130 ON U GOTO140,200,260,330,400  
,460,470,550,560,620,660,710,760  
,770,820  
140 A=RND(17)+2:B=RND(17)+2:C=RN  
D(17)+2:D=A+B-C:IF D<0 THEN140  
ELSEGOSUB1050  
150 ON RND(4) GOTO160,170,180,19  
0  
160 PRINT#-2,"... + "BS" = "CS"  
+"DS":AN(Y,X)=A:GOTO1060  
170 PRINT#-2,AS" + ... = "CS" +  
"DS":AN(Y,X)=B:GOTO1060  
180 PRINT#-2,AS" + "BS" = ... +  
"DS":AN(Y,X)=C:GOTO1060  
190 PRINT#-2,AS" + "BS" = "CS" +  
...":AN(Y,X)=D:GOTO1060  
200 A=RND(8)+2:B=RND(8)+2:C=RND(  
8)+2:IF A=C OR A*B/C<>INT(A*B/C)  
OR A*B/C<=1 OR A*B/C>10 THEN200  
210 D=A*B/C:GOSUB1050:ON RND(4)  
GOTO220,230,240,250  
220 PRINT#-2,"... X "BS" = "CS"  
X "DS":AN(Y,X)=A:GOTO1060  
230 PRINT#-2,AS" X ... = "CS" X  
"DS":AN(Y,X)=B:GOTO1060  
240 PRINT#-2,AS" X "BS" = ... X  
"DS":AN(Y,X)=C:GOTO1060  
250 PRINT#-2,AS" X "BS" = "CS" X  
...":AN(Y,X)=D:GOTO1060  
260 A=RND(8)+2:B=RND(8)+2:C=RND(  
90+10)  
270 IF A*B<=C THEN260 ELSE D=A*B  
-C:GOSUB1050  
280 ON RND(4) GOTO290,300,310,32  
0  
290 PRINT#-2,"... X "BS" = "CS"  
+"DS":AN(Y,X)=A:GOTO1060  
300 PRINT#-2,AS" X ... = "CS" +  
"DS":AN(Y,X)=B:GOTO1060  
310 PRINT#-2,AS" X "BS" = ... +  
"DS":AN(Y,X)=C:GOTO1060  
320 PRINT#-2,AS" X "BS" = "CS" +  
...":AN(Y,X)=D:GOTO1060  
330 A=RND(18)+2:B=RND(18)+2:C=RN  
D(18)+2  
340 IF A<=B OR A-B-C<1 THEN330  
350 D=A-B-C:GOSUB1050:ON RND(4)  
GOTO360,370,380,390  
360 PRINT#-2,"... - "BS" = "CS"  
+"DS":AN(Y,X)=A:GOTO1060  
370 PRINT#-2,AS" - ... = "CS" +  
"DS":AN(Y,X)=B:GOTO1060  
380 PRINT#-2,AS" - "BS" = ... +  
"DS":AN(Y,X)=C:GOTO1060  
390 PRINT#-2,AS" - "BS" = "CS" +  
...":AN(Y,X)=D:GOTO1060  
400 A=RND(18)+2:B=RND(18)+2:C=RN  
D(18)+2:IF A<=B OR A=C OR C-(A-B)  
<1 THEN400  
410 D=C-(A-B):GOSUB1050:ON RND(4)  
) GOTO420,430,440,450  
420 PRINT#-2,"... - "BS" = "CS"
```

```

    - "D$; : AN(Y,X)=A:GOTO1060
430 PRINT#-2,A$" - ... = "C$" -
    "D$; : AN(Y,X)=B:GOTO1060
440 PRINT#-2,A$" - "BS" = ... -
    "D$; : AN(Y,X)=C:GOTO1060
450 PRINT#-2,A$" - "BS" = "C$" -
..."; : AN(Y,X)=D:GOTO1060
460 A=RND(8)+1:B=A:C=A:D=A:E=A:G
OSUB1050:PRINT#-2,A$" + "BS" +
    "C$" - "D$" + "E$" ="; : AN(Y,X)=A
3:GOTO1060
470 A=RND(8)+2:B=RND(8)+2:C=RND(
A):GOSUB1050:ON RND(7) GOTO480,4
90,500,510,520,530,540
480 PRINT#-2,"("A$" X "BS") - "C
$" = ..."; : AN(Y,X)=A*B-C:GOTO106
0
490 PRINT#-2,"("A$" X "BS") + "C
$" = ..."; : AN(Y,X)=A*B+C:GOTO106
0
500 PRINT#-2,"("A$" X ...) + "C$
" = "A*B+C; : AN(Y,X)=B:GOTO1060
510 PRINT#-2,"(... X "BS") + "C$
" = "A*B+C; : AN(Y,X)=A:GOTO1060
520 PRINT#-2,"("A$" X ...) - "C$
" = "A*B-C; : AN(Y,X)=B:GOTO1060
530 PRINT#-2,"(... X "BS") - "C$
" = "A*B-C; : AN(Y,X)=A:GOTO1060
540 D=A*B-C:D$=STR$(D):D$=RIGHT$(D$,LEN(D$)-1):PRINT#-2,"("A$" X
    "BS") - ... = "D$; : AN(Y,X)=C:GO
TO1060
550 A=RND(8)+2:B=A*2:C=A*3:GOSUB
1050:PRINT#-2,A$", "BS", "C$",
..."; : AN(Y,X)=A*4:GOTO1060
560 A=RND(8)+2:B=RND(6)+2:C=RND(
B)+2:IF A*B/C<2 OR A*B/C>9 OR A*
E/C>INT(A*B/C) THEN560
570 GOSUB1050:ON RND(4) GOTO580,
590,600,610
580 PRINT#-2,A$" X "BS; : GOSUB104
0:PRINT#-2," C$" = ..."; : AN(Y,X)
    )=A*B/C:GOTO1060
590 PRINT#-2,A$" X ..."; : GOSUB10
40:PRINT#-2," C$" = "A*B/C; : AN(Y,
X)=B:GOTO1060
600 PRINT#-2,"... X "BS; : GOSUB10
40:PRINT#-2," C$" = "A*B/C; : AN(Y,
X)=A:GOTO1060
610 PRINT#-2,A$" X "BS; : GOSUB104
0:PRINT#-2," ... = "A*B/C; : AN(Y,
X)=C:GOTO1060
620 A=RND(7)+2:B=RND(7)+2:C=RND(
7)+2:D=B:IF A<=C THEN620
630 GOSUB1050:ON RND(2) GOTO640,
650
640 PRINT#-2,"("A$" X "BS")+("C$
" X "D$")=...X"D$; : AN(Y,X)=A+C:G
OTO1060
650 PRINT#-2,"("A$" X "BS")-("C$
" X "D$")=...X"D$; : AN(Y,X)=A-C:G
OTO1060
660 A=RND(10)+10:B=RND(7)+2:C=RN
D(7)+2:IF B+C>A THEN650 ELSE D=A
- (B+C):GOSUB1050:ON RND(4) GOTO6
70,680,690,700
670 PRINT#-2,"...-(BS" + "C$")
    = "D$; : AN(Y,X)=A:GOTO1060
680 PRINT#-2,A$" - (...+ "C$")
    = "D$; : AN(Y,X)=B:GOTO1060
690 PRINT#-2,A$" - ("BS" +...) =

```



```

950 D$=D$+" II":GOTO1030
960 D$=D$+" III":GOTO1030
970 D$=D$+" IV":GOTO1030
980 D$=D$+" V":GOTO1030
990 D$=D$+" VI":GOTO1030
1000 D$=D$+" VII":GOTO1030
1010 D$=D$+" VIII":GOTO1030
1020 D$=D$+" IX"
1030 AN(Y,X)=A:PRINT#-2,"ROMAN "
CHR$(34)" D$" CHR$(34)" ="; : GO
TO1060
1038 REM* PRINTER CODES FOR
DIVISION SIGN *
1039 REM* CHR$(18) SET GRAPHICS
MODE * CHR$(28)CHR$(2)CHR$(136)
REPEAT GRAPHIC CHARACTER 136 TWO
TIMES * CHR$(30) GO BACK TO
ORDINARY PRINTING *
1040 PRINT#-2," ";CHR$(18);CHR$(28);
    CHR$(2);CHR$(136);CHR$(28);C
    HR$(2);CHR$(201);CHR$(28);CHR$(2
);CHR$(136);CHR$(30); : RETURN
1049 REM* CONVERT NUMBERS TO
STRINGS *
1050 A$=STR$(A):B$=STR$(B):C$=ST
R$(C):D$=STR$(D):E$=STR$(E):A$=R
IGHT$(A$,LEN(A$)-1):B$=RIGHT$(B$,
LEN(B$)-1):C$=RIGHT$(C$,LEN(C$)
-1):D$=RIGHT$(D$,LEN(D$)-1):E$=R
IGHT$(E$,LEN(E$)-1):RETURN
1060 NEXTY:FORZ=1TO2:PRINT#-2:NE
XTZ:NEXTX
1069 REM*** PRINT THE ANSWERS ***
1070 CLS:PRINT@264,"PRINTING ANS
WERS"
1080 PRINT#-2,TAB(0); "ANSWERS SH
EET #";SH
1090 PRINT#-2,TAB(10);CHR$(15);"
LIST A";CHR$(14);TAB(39);CHR$(15
); "LIST B";CHR$(14);TAB(68);CHR$(15
); "LIST C";CHR$(14)
1100 FORX=1TO12
1110 PRINT#-2,TAB(0);"; : PRINT#-
2,USING"##";X; : PRINT#-2,TAB(4);
"; : PRINT#-2,USING"####";AN(1,X)
; : PRINT#-2,TAB(14);"; : PRINT#-2,
    USING"##";X+12; : PRINT#-2,TAB(18
)"; : PRINT#-2,USING"####";AN(1,X
+12);
1120 PRINT#-2,TAB(26);"; : PRINT#-
2,USING"##";X; : PRINT#-2,TAB(30
)"; : PRINT#-2,USING"####";AN(2,X
); : PRINT#-2,TAB(40);"; : PRINT#-2
,USING"##";X+12; : PRINT#-2,TAB(4
4)"; : PRINT#-2,USING"####";AN(2,X
+12);
1130 PRINT#-2,TAB(52);"; : PRINT#-
2,USING"##";X; : PRINT#-2,TAB(56
)"; : PRINT#-2,USING"####";AN(3,X
); : PRINT#-2,TAB(66);"; : PRINT#-
2,USING"##";X+12; : PRINT#-2,TAB(
70);"; : PRINT#-2,USING"####";AN(
3,X+12)
1140 NEXTX
1150 PRINT#-2
1160 CLS:PRINT:PRINT"RUN AGAIN (
Y/N)":A$=INKEY$*
1170 A$=INKEY$:IF A$="Y" THEN RU
N ELSE IF A$<>"N" THEN1170
1180 END

```

⊕



ALIENS

... they're here

by John Baker

SEE IF YOU CAN beat the alien computer. In this game you try to score the most points against the computer or a friend.

If you have a Tandy speech/sound pak, then plug it in and the program will tell you what to do and give extra sound effects.

The screen is set out on a square grid with random numbers in rows,

4 7 9 3 2 7
7 5 4 1 3 2

Numbers that are odd are

32K + speech pak (optional)
GAME

negative and numbers that are even are positive, eg the number 1 is -1 and the number 4 is +4.

The cursor is to the left, eg

4 7 9 3 2 7
7 5 4 x 1 3 2

In this case the letter 'x' is the cursor, therefore the number is -1.

You take turns at picking a number. One person moves the cursor vertically when it is his/hers/its turn and the other person moves the cursor horizontally when it is his/hers/its turn. This is so

that you can only select from one column or row, eg

4 6 2 3 1 7
1 3 6 7 x 2 4
7 6 2 1 1 3

If player one can only move horizontally and it is his turn. He can select -1, -3, 6, -7, 2 or 4 because the cursor is in row two.

Player one uses the up and down arrows to move the cursor and the '1' key to select a number. This also applies when playing the computer.

Player two uses the left and right arrows to move the cursor and the '-' key to select a number.

The computer keeps score at the side and when all numbers are taken or it is impossible for both players to have a turn then the game is over.

Person with the highest score wins that game.

When the game is over you can play against them again. The computer keeps score of how many games each person has. This is above each players score in the game.

At any time during the game you may restart with 'R' or end the program with 'E'.

The Listing:

```
0 GOTO10
1 ***ALIEN BY JOHN BAKER
***WITH OR WITHOUT THE TANDY
***SPEECH/SOUND CARTRIDGE.
3 SAVE"284D:3":END'1
10 POKE&HFF7D,1:POKE&HFF7D,0:GOT
0100
20 POKE&HFF00+1,52:POKE&HFF00+3,
63:POKE&HFF00+35,60:FOR I=1 TO L
EN(A$)
30 IF PEEK(&HFF7E) AND 128=0 THEN
30
40 POKE &HFF7E,ASC(MID$(A$,I,1))
:NEXT I
50 IF PEEK(&HFF7E) AND 128=0 THE
N 50
60 POKE &HFF7E,13:RETURN
70 IF PEEK(&HFF7E)=191 THEN 70 E
LSE RETURN
80 IF PEEK(&HFF7E) AND 128=0 THE
80 ELSE RETURN
100 GOSUB1000
105 Z=352:A$=".JOHN BAKER SOFTW
HER ... PREZENT":GOSUB20
110 PRINT@Z+7,"John"+CHR$(128)+"baker"+CHR$(128)+"software";
113 IF Z=32 THEN 120
115 FOR C=1 TO 100:NEXT C:PRINT@Z+
7,STRING$(19,128);:Z=Z-32:GOTO11
0
120 Z=64+7
```

```

125 FORCV=1TO20:NEXTCV:PRINT@Z,C
HRS(163);:Z=Z+1:IF Z=64+7+19 THE
N 130 ELSE 125
130 PRINT@Z128+13,"present";:Z=16
0+13
135 PRINT@Z,CHR$(163);:Z=Z+1:IF
Z=160+13+7 THEN 140 ELSE 135
140 A$="THE A LE N":GOSUB20:PRI
NT@288+12,"THE ALIEN";:Z=256+4+1
2:Z1=Z+1
145 PRINT@Z,CHR$(211);:PRINT@Z1,
CHR$(211);:Z=Z-1:Z1=Z1+1:IF Z=25
6+11 THEN 150 ELSE 145
150 PRINT@Z256+11,CHR$(209);:PRIN
T@256+21,CHR$(210);:PRINT@288+11
,CHR$(213);:PRINT@288+21,CHR$(21
8);:PRINT@320+11,CHR$(180);:PRIN
T@320+21,CHR$(184);:Z=320+12:Z1=
320+20
155 PRINT@Z,CHR$(188);:PRINT@Z1,
CHR$(188);:Z=Z+1:Z1=Z1-1:IF Z=32
0+12+5 THEN 160 ELSE 155
160 Z=320+12
165 PRINT@Z,CHR$(163);:Z=Z+1:IF
Z=320+12+3+6 THEN 170 ELSE 165
170 DATA 2,2,0,0,0,254,254,254,1
5,0,0,254,0,0
175 GOSUB70:DIM A(13):Y=&HFF7E:P
OKEY, 175:GOSUB80:FORB=0TO 13:REA
D A(B):NEXT B:FOR A=0 TO 13:POKE
T,A:GOSUB80:POKE Y,A(A):GOSUB80
:NEXTA
180 FORA=0TO10:FORB=50 TO100 STE
P10:POKEY,0:GOSUB80:POKEY,B:GOSU
B80:NEXTB,A:FORA=0TO5:FORB=1TO25
5STEP10:POKEY,0:GOSUB80:POKEY,B:
GOSUB80:NEXTB,A:POKE&HFF7D,1:POK
E&HFF7D,0
185 PRINT@384+7,"instructions"+C
HRS(128)+"v"+CHR$(128)+"or"+CHR$(
128)+"n";:A$="INSTRUCTIONS . YES
 OR NO":GOSUB20:GOSUE70
186 A$=INKEY$:IF A$=""THEN186
187 IF A$="Y" THEN A$="YES":GOSUB
20:GOTO190 ELSE IF A$="N" THEN A
$="NO":GOSUB20:GOT190 ELSE 186
190 PRINT@480,"";:FORCV=1TO20:FO
RA=1TO100:NEXTA:PRINT:NEXTCV::IF
A$="YES" THEN 1200 ELSE 200
200 CLS0:GOSUB1000:PRINT@33,STRI
NG$(10,218);:"the"+CHR$(128)+"ali
en":STRING$(11,213);:Z=128+10:DI
X D(10,10)
201 PRINT@224+5,"SELECT 1 OR 2 P
LAYERS?";:A$="SELECT 1 OR 2 PLAY
ERS":GOSUB20:GOSUB70
202 A$=INKEY$:IF A$=""THEN202ELSE
IF A$="1"THEN600 ELSE3 IF A$="2"IT
HEN203 ELSE202
203 GOSUB20:PRINT@224+5,STRING$(
22,128);:A$="PLAYER 1.ENTER YOUR
NAME":GOSUB20:GOSUB70:PRINT@224
+5,"";:INPUT"PLAYER 1":P5$:PRINT
@224+5,STRING$(26,128):CHR$(149)
;
204 A$="PLAYER 2 .ENTER YOUR NAM
E":GOSUB20:GOSUB70:PRINT@224+5,
"";:INPUT"PLAYER 2":P6$:PRINT@22
4+5,STRING$(26,128):CHR$(149);
205 PRINT@Z,STRING$(21,32);:Z=Z+
32:IFZ=448+10THEN210ELSE205
210 PRINT@129,"player";:PRINT@16
1,"one";:PRINT@257+32,"player";:
PRINT@289+32,"two";:PRINT@160+4,
P3;:PRINT@289+32+3,P4;:PRINT@193
,"score";:PRINT@353,"score";
211 GOSUB1500
215 GOSUB 1600
219 CL=1:H=0:RW=1:P1=0:P2=0:MC=0
:CM=0:MP=0:MO=0
220 GOSUB1700
225 P1=P1+J:PRINT@193+32,P1;
230 GOSUB1900
235 P2=P2+J:PRINT@322+63,P2;
240 GOT0220
599 GOTO 599
600 GOSUB20:PRINT@224+5,STRING$(
22,128);
604 A$="HUMAN .. YOU MUST FIRST
ENTER YOUR NAME ..":GOSUB20:GOSU
B70:PRINT@224+5,"HUMAN":INPUTP7
$:PRINT@224+5,STRING$(26,128):CH
RS(149);
605 PRINT@Z,STRING$(21,32);:Z=Z+
32:IFZ=448+10THEN610ELSE605
610 PRINT@129,"human":P3;:PRINT@
257,"alien":P4;:PRINT@161,"score
";:PRINT@289,"score";
611 GOSUB1500
615 GOSUB1600
619 P1=0:P2=0:CL=1:RW=1:MP=0:MO=
0:MC=0:CM=1
620 GOSUB1700
625 P1=P1+J:PRINT@193,P1;
630 REM COMPUTERS TURN
639 X=1
640 KL=D(RW,X):IF KL=0 THEN X=X+
1:GOT0650 ELSE GOSUB800:FORI=1TO
10:J=D(RW,T):GOSUB1810:IF J=0 TH
EN IF T=10 THEN 665 ELSE NEXTT
641 IF KL>J THEN NEXTT ELSE X=X
+1:GOT0640
645 GOT0665
650 IF X=11 THEN MP=1:GOSUB900:G
OT0620
660 GOT0640
665 MP=0:CL=X:PRINT@96+9+(32*RW)
+(2*CL),CHR$(191);:P2=P2+KL:D(RW
,CL)=0:PRINT@321,P2;:SOUND20,1:G
OT0620
800 REM FIX
810 IF KL=1 THEN KL=-1
820 IF KL=3 THEN KL=-3
830 IF KL=5 THEN KL=-5
840 IF KL=7 THEN KL=-7
850 IF KL=9 THEN KL=-9
860 RETURN
900 REM COMPUTER MISSES TURN
910 IF MP=1 AND MO=1 THEN 25000
920 IF MP=1 AND MC=0 THEN A$="TH
E ALIEN MISSES A TURN":GOSUB20:G
OSUB70:GOT0620
930 A$="YOU MUST PASS YOUR TURN
":GOSUB20:GOSUB70:RETURN
999 GOTO 999
1000 REM BORDER ROUTINE
1010 CLS0:Z=15:Z1=16
1012 FORCV=1TO20:NEXTCV:PRINT@Z,
CHR$(156);:PRINT@Z1,CHR$(156);:Z
=Z-1:Z1=Z1+1:IFZ=0 THEN 1014 ELS
E 1012
1014 PRINT@0,CHR$(158);:PRINT@31
,CHR$(157);
1020 Z=Z+32:FORCV=1TO20:NEXTCV:P
RINT@Z,CHR$(154);:PRINT@Z+31,CHR
$(149);:IF Z=416 THEN 1030 ELSE
1020
1030 PRINT@448,CHR$(155);:PRINT@
479,CHR$(151);:Z=1:Z1=30
1040 FORCV=1TO20:NEXTCV:PRINT@44
8+Z,CHR$(147);:PRINT@448+21,CHR$(
147);:Z=Z+1:Z1=Z1-1:IF Z=16 THE
N Z=0:Z1=0:RETURN ELSE 1040
1199 REM INSTRUCTIONS
1200 GOSUB1000
1210 PRINT@33,STRING$(9,170);:"in
structions":STRING$(9,165);
1220 Z=97
1225 PRINT@Z,STRING$(30,32);:Z=Z
+32:IF Z=449 THEN 1230 ELSE1225
1230 PRINT@97,"CAN YOU BEAT THE
ALIEN?";:PRINT@129,"THE AIM OF T
HIS GAME IS TO";:PRINT@161,"SCOR
E MORE POINTS THAN THE";:PRINT@1
93,"COMPUTER OR OPPONENT.";:PRI
T@225,"YOU SELECT YOUR SCORE BY
";:PRINT@257,"PLAYER 1:1' PLAY
ER 2:'---";
1235 PRINT@289,"WHEN ALL NUMBERS
ARE";:PRINT@321,"TAKEN THE ONE
WITH THE HIGHEST";:PRINT@353,"SC
ORE WINS.";
1240 A$=" CAN YOU BEAT THE A LEE
N ... THE AIM OF THIS GAME IS T
O SCORE MORE POINTS THAN THE COM
PUTER OR OPPONENT . YOU SELECT YO
UR SCORE BY .. PLAYER 1 . 1 KEY A
ND PLAYER 2 . MY NUS KEY":GOSUB20
:GOSUB70
1245 A$="WHEN ALL NUMBERS ARE TA
KE N . THE ONE WITH THE HIGHEST
SCORE WINS .":GOSUB20:GOSUB70
1246 PRINT@417,"<PRESS AN
Y KEY>";:A$="PRESS ANY KEY":GOSU
B20:GOSUB70
1250 A$=INKEY$:IF A$=""THEN1250
1255 GOSUB70:DIM B(13):Y=&HFF7E:
POKEY, 175:GOSUB80
1256 FORB=0TO13:B(B)=0:NEXT
1257 B(7)=254:B(8)=15
1260 FORA=0TO13:POKEY,A:GOSUB80:
POKEY,B(A):GOSUB80:NEXT
1265 Z=20:Z1=120:FORB=1TO40::POK
EY,0:GOSUB80:POKEY,Z+(B*2):GOSUB
80:POKEY,0:GOSUB80:POKEY,Z1+(B*2
):GOSUB80:NEXTB
1270 POKE&HFF7D,1:POKE&HFF7D,0
1275 Z=97
1280 PRINT@Z,STRING$(30,32);:Z=Z
+32:IFZ=449THEN1285 ELSE1280
1285 PRINT@97,"YOU MAY MOVE ONLY
HORIZONTALLY";:PRINT@129,"OR ON
LY VERTICALLY";:PRINT@161,"SCOR
ING:-";:PRINT@193,"ODD NUMBERS-N
EGATIVE";:PRINT@225,"EVEN NUMBER
S-POSITIVE";:PRINT@353,"NOTE:-T
HAT THE CURSOR IS TO";:PRINT@353+
32,"THE LEFT OF THE NUMBER!";
1286 PRINT@257,"PRESS R TO RESTA
RT";:PRINT@289,"PRESS E TO QUIT"
;
1290 A$=" YOU MAY MOVE ONLY HORI
ZONTALLY OR ONLY VERTICALLY ...
SCORING IS .. ODD NUMBERS ARE NE
GATIF AND EVEN NUMBERS POSITIF .
PRESS R TO RE START THE PROGRA

```

M ..PRESS E TO QUIT THE PRO GRAM
 " 1295 GOSUB20:GOSUB70:A\$="" . NOTE
 THAT THE CURSOR IS TO THE LEFT O
 F THE NUMBER .. GOOD LUK! ":";GOSU
 B20:GOSUB70
 1300 PRINT#417," <PRESS AN
 Y KEY>;:A\$="PRESS ANY KEY TO BE
 GIN ":";GOSUB20:GOSUB70
 1305 A\$=INKEY\$:IF A\$=""THEN 1305
 1308 POKEY,175
 1309 FORB=0TO13:B(B)=0:NEXT:B(7)
 =254:B(8)=15:FORA=0TO13:POKEY,A:
 GOSUB80:POKEY,B(A):GOSUB80:NEXT
 1310 Z=20:Z1=120:FORB=60TO1STEP-
 1:POKEY,0:GOSUB80:POKEY,Z+B:GOSU
 B80:POKEY,0:GOSUB80:POKEY,Z1+B:G
 OSUB80:NEXTB
 1315 POKE&HFF7D,1:POKE&HFF7D,0
 1320 FORA=1TO16:FORC=1TO100:NEX
 TCV:PRINT#480,STRING\$(22,32):NEX
 T
 1330 GOTO 200
 1500 REM NUMBER ROUTINE
 1505 F=1:G=1:S=0
 1510 A=RND(22):ON A GOSUB 1520,1
 525,1530,1535,1540,1541,1542,154
 3,1544,1520,1525,1530,1535,1540,
 1541,1520,1525,1530,1535,1520,15
 25,1525,1520
 1515 G=G+1:IF G=11 THEN GOSUB151
 7
 1516 IF S=1 THEN RETURN ELSE 151
 0
 1517 F=F+1:G=1:IF F=11 THEN S=1:
 RETURN ELSE RETURN
 1520 D(F,G)=1:RETURN
 1525 D(F,G)=2:RETURN
 1530 D(F,G)=3:RETURN
 1535 D(F,G)=4:RETURN
 1540 D(F,G)=5:RETURN
 1541 D(F,G)=6:RETURN
 1542 D(F,G)=7:RETURN
 1543 D(F,G)=8:RETURN
 1544 D(F,G)=9:RETURN
 1600 REM PRINT NUMBERS
 1605 G=1:Z=128+10:Z1=Z
 1610 FORX=1TO10:PRINT#Z,D(G,X);:
 Z-Z+2:NEXT:G=G+1:Z1=Z1+32:Z=Z1:I
 F G=11 THEN RETURN ELSE 1610
 1700 REM VERTICAL PLAYER SELECTI
 ON
 1705 H=96+8+(2*CL)+(32*RW)
 1706 FORX=1TO10:IF D(X,CL)<>0THE
 N 1710
 1707 NEXT:MO=1:GOSUB1850:J=0:RET
 URN
 1710 C\$=CHR\$(175)
 1711 MO=0
 1715 PRINT#H,C\$;
 1720 A\$=INKEY\$:IF A\$=""THEN 1720
 1725 PRINT#H,CHR\$(32);
 1730 IF A\$=CHR\$(94) THEN H=H-32:R
 V=RW-1
 1731 IF A\$="R" THEN GOSUB30000
 1732 IF A\$=CHR\$(10) THEN H=H+32:R
 V=RW+1
 1733 IF A\$="E" THEN GOSUB35000
 1734 IF A\$="1" THEN J1=1:GOSUB180
 0:RETURN
 1740 IFH<128+10 THEN H=H+(32*10)
 :RW=RW+10

1742 IFH>416+10+20 THEN H=H-(32*
 10):RW=RW-10
 1745 PRINT#H,CHR\$(175);:GOT01720
 1800 REM SELECTION OF NUMBER
 1805 J=D(RW,CL):IF J=0 THEN A\$=""
 YOU CANT DO THAT ":";GOSUB20:GOSU
 B70:GOT01830 ELSE D(RW,CL)=0:PRIN
 T#H+1,CHR\$(191);:SOUND20,1
 1810 IF J=1 THEN J=-1
 1811 IF J=3 THEN J=-3
 1812 IF J=5 THEN J=-5
 1813 IF J=7 THEN J=-7
 1814 IF J=9 THEN J=-9
 1815 RETURN
 1830 IF J1=1 THEN 1710 ELSE IF J
 1=2 THEN 1910
 1850 REM SEE IF NO PLACES LEFT
 1851 IF CM=1 THEN MC=1:GOSUB900:
 MC=0:RETURN
 1855 IF MP=1 AND MO=1 THEN GOTO2
 0000
 1860 A\$="YOU MUST PASS YOUR TURN
 ..":GOSUB20:GOSUB70:RETURN
 1900 REM HORIZONTAL PLAYER SELEC
 TION
 1905 H=96+8+(32*RW)+(2*CL)
 1906 FORX=1TO10:IFD(RW,X)<>0THEN
 1910
 1907 NEXT:MP=1:GOSUB1850:RETURN
 1910 C\$=CHR\$(175)
 1911 MP=0
 1915 PRINT#H,C\$;
 1920 A\$=INKEY\$:IF A\$=""THEN 1920
 1925 PRINT#H,CHR\$(32);
 1930 IF A\$=CHR\$(9) THEN H=H+2:CL=
 CL+1
 1931 IF A\$="R" THEN GOSUB30000
 1932 IF A\$=CHR\$(8) THEN H=H-2:CL=
 CL-1
 1933 IF A\$="E" THEN GOSUB35000
 1934 IF A\$="-" THEN J1=2:GOSUB18
 00:RETURN
 1940 IFH<96+10+(32*RW) THEN H=H+
 2:CL=10:H=H+(2*9)
 1942 IFH>96+10+18+(32*RW) THEN H=
 H-(2*10):CL=1
 1945 PRINT#H,CHR\$(175);:GOT01920
 2000 Y=&HFF7E:POKEY,175:GOSUB80
 2005 ON JK GOSUB2010,2020,2030,2
 040
 2006 POKE&HFF7D,1:POKE&HFF7D,0
 2007 RETURN
 2010 FORX=255TO1STEP-1:POKEY,0:G
 OSUB80:POKEY,X:GOSUB80:POKEY,7:G
 OSUB80:POKEY,62:GOSUB80:POKEY,8:
 GOSUB80:POKEY,15:GOSUB80:NEXT:RE
 TURN2020 FORX=1TO200STEP5:POKEY,
 0:GOSUB80:POKEY,X:GOSUB80:POKEY,
 7:GOSUB80:POKEY,62:GOSUB80:POKEY
 ,8:GOSUB80:POKEY,15:GOSUB80:NEXT
 :RETURN
 2030 FORB=0TO13:A(B)=0:NEXT:A(7)
 =7:A(8)=16:A(9)=16:A(10)=16:A(12
)=56
 2031 FORA=0TO13:POKEY,A:GOSUB80:
 POKEY,A(A):GOSUB80:NEXT
 2035 POKEY,13:GOSUB80:POKEY,0:FO
 RA=1TO1500*500:NEXTA:RETURN
 20000 JK=2:GOSUB2000:JK=3:GOSUB2
 000:A\$="GAME OVER .":GOSUB20:GOS
 UB70:IF P1>P2 THEN A\$=P5\$+" IS T
 HE WINNER":P3=P3+1 ELSE IF P2>P1
 THEN A\$=P6\$+" IS THE WINNER":P4
 =P4+1 ELSE A\$="YOU BOTH WIN .. IT
 IS A DRAW ":P3=P3+1:P4=P4+1
 20005 PRINT#289+35,P4;:PRINT#164
 ,P3;
 20010 GOSUB20:GOSUB70:A\$="PLAYER
 1 .. YOU "+P6\$+" HAVE 1 "+STR\$(P
 3)+" GAMES ":GOSUB20:GOSUB70:A\$=
 "PLAYER 2 .. YOU "+P6\$+" HAVE 1 "
 "+STR\$(P4)+" GAMES ":GOSUB20:GOS
 UB70
 20020 A\$="DO YOU BOTH WISH TO CO
 NTINUE PLAYING .. YES OR NO .":G
 OSUB20:GOSUB70
 20025 PRINT#96+10,"CONTINUE?";
 20030 A\$=INKEY\$:IF A\$=""THEN 20030
 ELSEIF A\$="Y":THENGOSUB1000:Z=128+
 10:PRINT#33,STRING\$(10,218);:"the
 "+CHR\$(128)+"alien":STRING\$(11,2
 13);:GOTO205 ELSE IF A\$="N" THEN
 20040 ELSE 20020
 20040 GOTO 25050
 25000 JK=2:GOSUB2000:JK=3:GOSUB2
 000:A\$=" GAME OVER .."
 25005 IF P1>P2 THEN A\$="YOU HAVE
 BEATEN THE A LEE N ":GOSUB20:GO
 SUB70:P3=P3+1 ELSE IF P2>P1 THE
 N A\$="THE A LEE N HAS BEATEN YOU
 .. YOU LOSE !":GOSUB20:GOSUB70:
 P4=P4+1
 25010 IF P1=P2 THEN A\$="THE GAME
 WAS A DRAW .. WE BOTH WIN ..":G
 OSUB20:GOSUB70:P3=P3+1:P4=P4+1
 25015 PRINT#129+5,P3;:PRINT#257+
 5,P4;
 25020 A\$=P7\$+" HAS 1 "+STR\$(P3)+
 " GAMES ":GOSUB20:GOSUB70:A\$=".
 . THE A LEE N HAS 1 "+STR\$(P4)+"
 GAMES ":GOSUB20:GOSUB70
 25030 A\$=" .. I WISH TO CONTINUE
 PLAYING .. DO YOU ALSO WISH TO
 CONTINUE PLAYING HUMAN .. YES OR
 NO ":GOSUB20:GOSUB70
 25035 PRINT#96+10,"CONTINUE?";
 25040 A\$=INKEY\$:IF A\$=""THEN 25040
 ELSEIF A\$="Y":THENGOSUB1000:Z=128+
 10:PRINT#33,STRING\$(10,218);:"the
 "+CHR\$(128)+"alien":STRING\$(11,2
 13);:GOTO605 ELSE IF A\$="N" THEN
 25050 ELSE 20020
 25050 CLS:A\$=" THIS WAS BROUGHT
 TO YOU BY JOHN BAKER SOFTWARE"
 :GOSUB20:GOSUB70:JK=1:GOSUB2000:
 JK=3:GOSUB2000:PRINT#480,"THE EN
 D!":END
 30000 A\$=" ARE YOU SURE THAT YOU
 WANT TO RE START THE PRO GRAM
 .. YES OR NO .":GOSUB20:GOSUB70
 30010 A\$=INKEY\$:IF A\$=""THEN 30010
 30020 IF A\$="Y":THENRUN ELSE IF A\$=
 "N" THEN A\$=" GOOD CHOICE ":GOSU
 B20:GOSUB70:RETURN ELSE 30000
 30050 GOTO25050
 35000 A\$="ARE YOU SURE YOU WANT
 TO QUIT THE PRO GRAM .. YES OR NO
 ..":GOSUB20:GOSUB70
 35010 A\$=INKEY\$:IF A\$=""THEN 35010
 ELSEIF A\$="Y":THEN25050 ELSE IF A\$=
 "N" THEN A\$=" GOOD CHOICE ":GOSUB
 20:GOSUB70:RETURN ELSE 35000

PRIME TIME

by Bob Horne

CoCo 1, 2 and 3 EDUCATION

PLEASE NOTE THAT if you have a grey-case CoCo, you may find it advantageous to PCLEAR8 before loading the program.

In this program, you are able to choose the level of numbers to be practised (19 to 99 in 9 levels). You may also choose to practise picking the prime or the composite or a mixture of both from a set of 4,5 or 6 numbers.

These numbers are put at the top of the screen. The bottom half of the screen represents a view of empty space through your observation window. When you have the answer correct, a spacecraft suddenly appears, zooming straight towards you. At the last moment, however, it changes course and zips beneath your window. The various images of the spacecraft are drawn and stored on graphics pages 4 to 8.

These are then copied to page 2 with the PCOPY command. This happens so rapidly that a short delay loop has to be included (Line 1150 in Version 1 and Line

1110 in Version 2).

Graphics page 3 holds the view of empty space.

Two versions (as mentioned in the previous paragraph) are included. The first version contains class names which, of course, you will want to alter to suit your own class.

Change the data in LINE 1520. Also change the value of TL in Line 10 to the number of names you wish to enter. If you have more than 28 in your class, you will have to find some other method to get the user's name (Lines 560 to 580).

For example, you could use a similar method to that used in my programs on fractions.

Of course, if you are using a CoCo 3 then just set the WIDTH to 40 and you should have no problems.

In any event, if you have a problem with this, please contact me. In this version, pressing "E" on the final screen of the program will get you a list of users who need further help.

Please treat this as a guide only as some users will deliberately get answers wrong to prolong their stay at the computer.

Listing One

```
1 REM*****  
2 REM* PRIME AND COMPOSITE *  
3 REM* NUMBERS***FOR COCO1 & 2 *  
4 REM* BY *  
5 REM* BOB HORNE *  
6 REM*****  
7 GOTO9  
8 SAVE"309B:3":END'2  
9 IF PEEK(188)=8 THENPOKE248,50:  
POKE249,98:POKE250,28:POKE251,17  
5:POKE252,126:POKE253,173:POKE25  
4,165:POKE410,126:POKE411,0:POKE  
412,248:REM*****DISABLE <BREAK  
KEY>*****  
10 PCLEAR8:CLEAR600:TL=28:DIMCS$,  
WS,CH$(58),NS(TL),RS(TL),PN(25),  
CN(73),CA(8),AR(4),AQ(4),TT(3),D  
(6),C(6),CS(6)  
20 CLS:PRINT@194,"PRIME AND COMP  
OSITE NUMBERS.":PRINT@270,"BY":P  
RINT@330,"BOB HORNE.":SCREEN0,1
```

```

30 FORX=1TO25: READPN(X): NEXTX: FO
RX=1TO73: READCN(X): NEXTX
40 FORZ=0TO58: READCH$(Z): NEXTZ: F
ORZ=1TO TL: READNS(Z): NEXTZ: FORZ=
1TO TL: R$(Z)=STRINGS(3,32): NEXTZ
50 PS="L16T16P16": P1$="T12L4V150
3CEGO4L2C03L4G04L2C": P2$="L8T8P8
": P3$="T12L4O2V15CFDEGABGFDEC
GAD FEGCFDEGADCGEFL1C": A=RND(-T
IMER)
60 RA$(1)="GREAT": RA$(2)="GOOD":
RA$(3)="TOPS": RA$(4)="YEAHHH": CO
LORS,8: PMODE1,1:PCLS: DRAW"S4BM5,
20U20NG5F5": GET(0,0)-(10,20),AR,G
70 L=22: Y2=0: S=8
80 C1$="C8R8U2R8D2R8U4R16D4R8U2R
8D2R8D3L8D2L8U2L8D4L16U4L8D2L8U2
L8U3": GOSUB150: PCOPY2T03: DRAW"S4
BM95,165"+C1$: PAINT(97,166): LINE
(122,165)-(131,168),PRESET,BF: GO
SUB150: PCOPY2T04
90 CLS: PRINT@261,"JUST A MOMENT
PLEASE.": SCREEN0,1
100 PCLS: DRAW"S8BM3,163"+C1$: PA
INT(65,165): LINE(119,163)-(134,1
70),PRESET,BF: GOSUB150: PCOPY2T05
110 PCLS: DRAW"S12BM31,161"+C1$: P
AINT(32,162): LINE(114,161)-(139,
173),PRESET,BF: GOSUB150: PCOPY2T0
6
120 PCLS: DRAW"S16BM0,162"+C1$: PA
INT(2,164): LINE(110,160)-(145,17
6),PRESET,BF: GOSUB150: PCOPY2T07
130 PCLS: C1$="C8U2R8D2R8U4R16D4R
8U2R8D7L8U2L8D2L16U2L8D2L8U2L8U3
": DRAW"S21BM0,164"+C1$: PAINT(2,1
66): LINE(103,161)-(148,191),PRES
ET,BF: GOSUB150: PCOPY2T08
140 GOTO410
149 REM****WINDOWS OF S-SHIP*****
150 DRAW"C7S4BM0,133M30,143R195M
255,133NL256BM225,143D43NR30L195
HU43L30": PAINT(35,135),7,7: PAINT
(2,189),7,7: LINE(0,103)-(255,125
),PSET,B
160 X1=2: Y1=118: C1=6: C$="KEYS
": GOSUB170: X1=140: C$="ENTER
",HELP": GOSUB170: DRAW"C6BM57,113N
E3NF3R8BR11R8NH3NG3": RETURN
169 REM***DIVIDE UP TO PRINT*****
170 IF LEN(C$)<=L THEN IN$=C$: GOSU
B210: RETURN
180 FORT=L TO1STEP-1: IF MIDS(C$,T
,1)="" "THEN200
190 NEXTT
200 WS=LEFT$(C$,T): GOSUB210: C$=R
IGHT$(C$,LEN(C$))-T): GOTO170
209 REM***TO GRAPHICS SCREEN****
210 IF SC$=1 THEN260 ELSE DRAW"S-
;C-C1; BM"+STR$(X1)+","+STR$(Y1)
220 FORI=1TOLEN(WS)
230 F=ASC(MIDS(WS,1,1))-32
240 DRAWCH$(F)+"BR3"
250 NEXT!: Y1=Y1+Y2: RETURN
259 REM****TO TEXT SCREEN*****
260 PRINTWS: RETURN
269 REM***GET NEW PAGE (TEXT)****
270 PRINT@484,"PRESS (ENTER) TO
CONTINUE.": IN$=INKEY$
280 IN$=INKEY$: IF IN$<>CHR$(13)
THEN280 ELSE RETURN
289 REM****HELP ASKED FOR*****
290 PUT(P,40)-(P+10,60),AQ,PSET:
IF H<HM-1 THEN320
300 IF R1=1 THEN C$="PRIME": C2$=
"ONLY TWO FACTORS." ELSE C$="COM
POSITE": C2$="MORE THAN TWO FACTO
RS."
310 C$=C$+" NUMBERS HAVE "+C2$: X
1=0: Y1=65: C1=7: GOSUB170: FORX=1TO
1500: NEXTX: LINE(0,50)-(255,95),P
RESET,BF: PUT(P,40)-(P+10,60),AR,
PSET: FORX=1TO HM: D(X)=0: NEXTX: H=
0: RETURN
320 H=H+1: IF H=3 THEN NW=NW+1
330 D=RND(HM): IF D=B THEN330
340 IF D(D)=1 THEN330 ELSE D(D)=
1
350 A=0: FORX=1TO C(D)
360 IF C(D)/X=INT(C(D)/X) THEN A
=A+1
370 NEXTX
380 A$=STR$(A): X1=0: Y1=65: C1=7: Y
2=14: C$=C$(D)+" HAS"+A$+" FACTOR
S.": GOSUB170
390 FORX=1TO1500: NEXTX
400 LINE(0,50)-(255,95),PRESET,B
F: PUT(P,40)-(P+10,60),AR,PSET: RE
TURN
409 REM****CHOOSE A LEVEL*****
410 C$=CHR$(128): CLS: PRINT@0,STR
ING$(5,128)+"please"+C$+"choose"
+C$+"a"+C$+"level"+STRING$(5,128
);
420 FORX=1TO9: PRINT@X*32+37,STR
$(X)+" - NUMBERS TO" X*10+9: :NEXTX
430 PRINT@416,STRING$(3,128)+"pl
ease"+C$+"type"+C$+"a"+C$+"numbe
r"+C$; :POKE1464,40: POKE1465,49: P
OKE1466,45: POKE1467,57: POKE1468,
41: PRINT@445,STRING$(3,128); :
440 IN$=INKEY$
450 IN$=INKEY$: IF IN$="" THEN450
ELSE IF ASC(IN$)<49 OR ASC(IN$)>
57 THEN450
459 REM*****WHICH KIND?*****
460 N=VAL(IN$): CLS: PRINT@0,STRIN
G$(6,128)+"please"+C$+"choose"+C
$+"a"+C$+"type"+STRING$(6,128);
470 PRINT@104,"1 - PRIME.": PRINT
@136,"2 - COMPOSITE.": PRINT@168,
"3 - A MIXTURE."
480 PRINT@256,STRING$(3,128)+"pl
ease"+C$+"type"+C$+"a"+C$+"numbe
r"+C$; :POKE1304,40: POKE1305,49: P
OKE1306,45: POKE1307,51: POKE1308,
41: PRINT@285,STRING$(3,128);
490 IN$=INKEY$
500 IN$=INKEY$: IF IN$="" THEN500
ELSE IF ASC(IN$)<49 OR ASC(IN$)>
51 THEN500
510 R=VAL(IN$)
519 REM***HOW MANY ON SCREEN****
520 PRINT@384,"HOW MANY NUMBERS
WOULD YOU LIKE ON THE SCREEN AT
ONCE?": PRINT@480,STRING$(3,128)"p
lease" C$"type" C$"a" C$"number" C$"
; :POKE1528,40: POKE1529,52: POKE15
30,45: POKE1531,54: POKE1532,41: PO
KE1533,32: POKE1534,32: POKE1535,3
2
530 IN$=INKEY$
540 IN$=INKEY$: IF IN$="" THEN540
ELSE IF ASC(IN$)<52 OR ASC(IN$)
>54 THEN540
550 HM=VAL(IN$)
559 REM***GET THE USER'S NAME***
560 NW=0: CLS: FORX=1TO TL: X$=STR$(X
): IF X>9 THEN X$=RIGHT$(X$,2)
570 PRINTX$;"."; NE(X),: NEXTX: INP
UT"TYPE NUMBER IN FRONT OF NAME
THEN PRESS ENTER--->"; N$
580 K=VAL(N$): IF K<1 OR K>TL THE
NCLS: GOTO560
590 GOSUB1350: CLS
600 IF R=3 THEN R1=RND(2) ELSE R
1=R
610 PCLS: SCREEN1,1
619 REM****PICK THE NUMBERS*****
620 ON N GOTO630,640,650,660,670
,680,690,700,710
630 N1=8: N2=10: GOTO720
640 N1=10: N2=18: GOTO720
650 N1=12: N2=26: GOTO720
660 N1=15: N2=33: GOTO720
670 N1=17: N2=41: GOTO720
680 N1=19: N2=49: GOTO720
690 N1=22: N2=56: GOTO720
700 N1=24: N2=64: GOTO720
710 N1=25: N2=73
720 B=RND(HM)
730 IF R1=2 THEN810
740 FORX=1TO HM
750 C=RND(N2): C(X)=CN(C): IF X=1
THEN790
760 FORZ=X-1 TO1STEP-1
770 IF C(X)=C(Z) THEN Z=1: NEXTZ:
GOTO750
780 NEXTZ
790 NEXTX
800 C=RND(N1): C(B)=PN(C): GOTO880
810 FORX=1TO HM
820 C=RND(N1): C(X)=PN(C): IF X=1
THEN860
830 FORZ=X-1 TO1STEP-1
840 IF C(X)=C(Z) THEN Z=1: NEXTZ:
GOTO820
850 NEXTZ
860 NEXTX
870 C=RND(N2): C(B)=CN(C)
879 REM*****SET UP SCREEN*****
880 PCLS: Y2=0: PCOPY3T02
890 DRAW"C8": LINE(0,0)-(255,14),
PSET,BF: IF R1=1 THEN C2$="PRIME"
:X1=47 ELSE C2$="COMPOSITE": X1=2
3
900 Y1=12: C1=5: C$="PICK THE "+C2
$: GOSUB170
910 Y1=35: FORX=1TO HM
920 IF HM=4 THEN X1=(X-1)*56+33
ELSE IF HM=5 THEN X1=(X-1)*46+25
ELSE X1=(X-1)*42+14
930 C$(X)=STR$(C$(X)): C$(X)=RIGHT
$(C$(X),LEN(C$(X))-1): C$=C$(X): D
RAW"C6": LINE(X1-5,21)-(X1+24,39
),PSET,B: IF LEN(C$(X))=1 THENX1=X
1+6
940 C1=8: GOSUB170: NEXTX
950 IF HM=4 THEN P=39 ELSE IF HM
=5 THEN P=31 ELSE P=20
960 FORX=1TO HM: D(X)=0: NEXTX: H=0
:B1=1
970 PUT(P,40)-(P+10,60),AR,PSET
979 REM****GET AN ANSWER*****
980 IN$=INKEY$
990 IN$=INKEY$: IF IN$="" THENDRA

```

```

W'C5BM212,118;XCH$(40);":PLAYP2$  

:DRAW'C6BM212,118;XCH$(40);":PLA  

YP2$:GOTO990  

1000 IF INS$="H" THEN GOSUB290:GO  

TO990  

1010 IF INS$=CHR$(8) OR INS$=CHR$(  

9) OR INS$=CHR$(13) THEN PUT(P,40  

)-(P+10,60),AQ,PSET ELSE990  

1020 IF INS$=CHR$(9) THEN1060 ELS  

E IF INS$=CHR$(13) THEN1100  

1030 IF HM=4 AND P=<39 THEN1090  

ELSE IF HM=4 THEN P=P-56:B1=B1-1  

:GOTO1090  

1040 IF HM=5 AND P=<31 THEN1090  

ELSR IF HM=5 THEN P=P-46:B1=B1-1  

:GOTO1090  

1050 IF HM=6 AND P=<20 THEN1090  

ELSE P=P-42:B1=B1-1:GOTO1090  

1060 IF HM=4 AND P=>207 THEN1090  

ELSE IF HM=4 THENP=P+56:B1=B1+1  

:GOTO1090  

1070 IF HM=5 AND P=>215 THEN1090  

ELSE IF HM=5 THENP=P+46:B1=B1+1  

:GOTO1090  

1080 IF HM=6 AND P=>230 THEN1090  

ELSEP=P+42:B1=B1+1  

1090 PUT(P,40)-(P+10,60),AR,PSET  

:GOTO990  

1099 REM****EVALUATE ANSWER*****  

1100 IF HM=4 THEN P1=(B1-1)*56+3  

3 ELSE IF HM=5 THEN P1=(B1-1)*46  

+25 ELSE P1=(B1-1)*42+14  

1110 IF B1<>B THEN1170  

1120 FORX=1TO11:GET(P1-5,21)-(P1  

+24,39),CA,G:PUT(P1-5,21)-(P1+24  

,39),CA,NOT:NEXTX  

1130 X1=0:Y1=75:Y2=14:C1=8:C$=RA  

$(RND(4))+". "+C$(B)+" HAS ":"IF  

R1=1 THENC$=C$+"ONLY 2 FACTORS."  

ELSE IF R1=2 THEN C$=C$+"MORE T  

HAN 2 FACTORS."  

1140 GOSUB170  

1150 PLAYP1$:FORX=4TO8:PCOPYX TO  

2:FORY=1TO30:NEXTY:NEXTX:PCOPY3  

TO2:FORX=1TO1000:NEXTX:PCLS  

1160 NU=NU+1:IF NU=10 THEN NU=0:  

GOTO1210 ELSE600  

1170 GET(P1-5,21)-(P1+24,39),CA,  

G:PUT(P1-5,21)-(P1+24,39),CA,NOT  

1180 NW=NW+1:X1=0:Y1=65:Y2=14:C1  

=8:C$="SORRY. "+C$(B)+" HAS ":"IF  

R1=1 THEN C$=C$+" MORE THAN TWO  

FACTORS." ELSE IF R1=2 THEN C$=C$+"  

ONLY TWO FACTORS."  

1190 GOSUB170:PLAYP3$:LINE(0,51)  

-(255,95),PRESET,BF:Y1=75:C$="TR  

Y THAT AGAIN PLEASE.":GOSUB170:F  

ORX=1TO1000:NEXTX:LINE(0,60)-(25  

5,78),PRESET,BF  

1200 PUT(P1-5,21)-(P1+24,39),CA,  

PSET:GOTO970  

1209 REM*****DOES THIS USER  

NEED HELP*****  

1210 IF NW>3 AND R=1 THEN MID$(R  

$(K),1,1)="*":TT(1)=TT(1)+1 ELSE  

IF NW>3 AND R=2 THEN MID$(R$(K)  

,2,1)="*":TT(2)=TT(2)+1 ELSE IF  

NW>3 AND R=3 THEN MID$(R$(K),3,1  

)="*":TT(3)=TT(3)+1  

1219 REM*****GET NEXT USER*****  

1220 PCLS:X1=0:Y1=101:Y2=14:C1=8  

:CS="NEXT PLAYER. PRESS <ENTER>.  

":GOSUB170:C1=7:C$=" TO END."  

:GOSUB170:INS=INKEYS  

1230 INS=INKEYS:IF INS="" THEN12  

30  

1240 IF INS=CHR$(13) THEN1560 ELS  

E IF INS="E" THEN1250 ELSE1230  

1250 FORZ1=1TO3  

1260 IF TT(Z1)=0 THEN C$="NO ONE  

NEEDS HELP IN " ELSE IF TT(Z1)=  

1 THEN C$="THIS STUDENT NEEDS HE  

LP IN " ELSE C$="THESE STUDENTS  

NEED HELP IN "  

1270 IF Z1=1 THEN C$="PRIME NUM  

BERS." ELSE IF Z1=2 THEN C$="CO  

MPOSITE NUMBERS." ELSE C$="BOTH  

PRIME AND COMPOSITE NUMBERS."  

1280 L=31:CS=C$+C$:SC=1:GOSUB17  

0:IF TT(Z1)=0 THEN GOSUB270:GOTO  

1320  

1290 X=0:FORZ=1TO TL:IF MID$(R$(  

Z),Z1,1)="*" THENPRINTNS(Z):X=X+  

1  

1300 IF X<>0 AND X/10=INT(X/10)  

THEN GOSUB270:CLS  

1310 NEXTZ:PRINT'THERE ARE NO MO  

RE NAMES.":GOSUB270  

1320 CLS:NEXTZ1  

1330 CLS:PRINT'<R>UN AGAIN OR <E  

>ND?':PRINT:PRINT'PLEASE TYPE <R  

> OR <E>.';INS=INKEYS  

1340 INS=INKEYS:IF INS="R" THEN  

RUN ELSE IF INS<>"E" THEN1340  

1350 CLS:END  

1359 REM*****EXPLANATION*****  

1360 IF R=2 THEN1400 ELSE IF R=3  

THENGOSUB1370:GOSUB1400:RETURN  

1370 CLS:PRINT"PRIME NUMBERS HAV  

E ONLY TWO FACTORS. FOR EXAM  

PLE, 5 IS A PRIME NUMBER BECA  

USE ITS ONLY FACTORS ARE 5 AND  

1."1380 PRINT:PRINT"ZERO AND ON  

E ARE NOT PRIME NUMBERS BEC  

AUSE THEY DO NOT HAVE2 FACTORS.  

1390 PRINT:PRINT"THE PRIME NUMBE  

RS LESS THAN 20 ARE :":PRINT"2  

, 3, 5, 7, 11, 13, 17 AND 19":GO  

SUB270:RETURN  

1400 CLS:PRINT"COMPOSITE NUMBERS  

HAVE MORE THAN TWO FACTORS. FOR  

EXAMPLE, 8 HAS 1, 2, 4 AND 8 AS  

FACTORS. THEREFORE, 8 IS A  

COMPOSITE NUMBER."  

1410 PRINT:PRINT"THE COMPOSITE N  

UMBERS LESS THAN 20 ARE :":PRINT  

:PRINT"4, 6, 8, 9, 10, 12, 14, 1  

5, 16 AND 18.":GOSUB270:RETURN  

1419 REM*****PRIME NUMBERS*****  

1420 DATA2,3,5,7,11,13,17,19,23,  

29,31,37,41,43,47,53,59,61,67,71  

,73,79,83,89,97  

1429 REM***COMPOSITE NUMBERS***  

1430 DATA4,6,8,9,10,12,14,15,16,  

18,20,21,22,24,25,26,27,28,30,32  

,33,34,35,36,38,39,40,42,44,45,4  

6,48,49,50,51,52,54,55,56,57,58,  

60,62,63,64,65,66,68,69,70,72  

1440 DATA74,75,76,77,78,80,81,82  

,84,85,86,87,88,90,91,92,93,94,9  

5,96,98,99  

1449 REM****CHARACTER DATA****  

1450 DATA1BR2, BR2UBU2U2BRBD5, BU5N  

DBR3DBD4, BRUNLU3NLNURNUNRD3NLNRD  

BR, BRUNLREHL2URNUR2BD4, BR3NUBL3U  

E3UBL3DBD4BR3, BRHENF2HEFGBD2REBD  

, BU5BRRDGBD3BR2, BR2HU3EBRBD5, BRB  

U3HBD5BR2, BRBUE3BD3NH3BDBR, BU3BR  

2DNLNRDBDBR  

1460 DATA1BRUNRDRNUUDGBU2BR2, BRBU2  

R2BD2, BRRULDBR2, BUBRRBU2NL3NR2BU  

2LBD5BR3, BRHU3ERFD3GLBR2, R2U5NLD  

5R  

1470 DATA NR3UEREU2LLGDB4BR3, BUF  

RBUHNLEUL3BD5BR3, BR3U5D3L3UE2RBD  

5, BUFREUHL2V2R3BD5, BUNUFREUHLGU2  

ERBD5BR, BU4VR3D2G3BR3, BUNUFREUHL  

NGHERFGBD3BR, BRREU3HLGDFREBD3, BR  

2UBU2UBD4BR  

1480 DATA1BR2URD2GBU5URDLBD3BR, BR  

2H2UE2BD5BR, BRBUNR2BU2R2BD3, BRE2  

UH2BD5BR2, BR2UBUUREHL2BD5BR3,, U2  

NR3U2ERFD4  

1490 DATA U3NR2U2R2FGFDGL2BR3, BU  

U3ERFB3DGLHBDBR3, U5RF2DG2LBR3, NR  

3U3NR2U2R3BD5, U3NR2U2R3BD5, BUU3E  

RBRBD3NLGHLBDBR3, U3NU2R3NU2D3, B  

RU5BD5BR2, BUFEU4NRL2BD5BR3, U5D2R  

E2G2F2D, NU5R3, U5F2NDE2D5, U5P3U3D  

5  

1500 DATA1BRHU3ERFD3GLBR2, U5R2FDG  

L2BD2BR3, BUU3ERFD3NNFGLHBDBR3, U  

5R2FGL2F3, BUFREUHL2UERFBDA  

1510 DATA BRU5LR3BD5, NU5R3U5BD5,  

BU5D3FDRUEU3BD5, NU5E2NUF2NU5, UE2  

H2BR3DGFD2, BU5D2FRD2NLU2E2BD5, U  

R3UE3UL3BD5BR3  

1519 REM*****CLASS NAMES*****  

1520 DATARCN B, DAVID C, WARWICK C  

,DARREN C, GRAHAM D, MICHAEL F, BEN  

H, MARK H, SCOTT H, JOEL H, JOSEPH  

L, WILLIAM L, DAMIEN Mc, GREG Mc, PA  

UL Mc, DAMON M, MICHAEL MAT, KEN M,  

MICHAEL MUL, LUKE M, MARK P, STEPH  

E R, SHAWN E, ANTHONY S, BRADLEY S,  

GRANT S, KIMBERLY V, SIMON  


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Listing Two

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1 REM*****  

2 REM*PRIME AND COMPOSITE *  

3 REM* NUMBERS * FOR *  

4 REM* BY *COCO 1 & 2 *  

5 REM* BOB HORNE * VERSION 2 *  

6 REM*****  

7 GOTO9  

8 SAVE"309BA:3":END'2  

9 IF PEEK(188)=8 THEN POKE248,50  

:POKE249,98:POKE250,28:POKE251,1  

75:POKE252,126:POKE253,173:POKE2  

54,165:POKE410,126:POKE411,0:POK  

E412,248:REM***DISABLE <BREAK>  

KEY*****  

10 FCLEAR8:CLEAR00:DIMC$,VS,CH$  

(58),PN(25),CN(73),CA(8),AR(4),A  

Q(4),D(6),C(6),C$(6)  

20 CLS:PRINT@194,"PRIME AND COMP  

OSITE NUMBERS.":PRINT@270,"BY":P  

RINT@330,"BOB HORNE.":SCREEN0,1  

30 FORX=1TO25:READPN(X):NEXTX:FO  

RX=1TO73:READCN(X):NEXTX

```

```

40 FORZ=0TO58:READCH$(Z):NEXTZ
50 P$="L16T16P16":P1$="T12L4V150
3CEGO4L2C03L4G04L2C":P2$="L8T8P8
":P3$="T12L4O2V15CFDEGABGFDECCAD
PEGCFDEGADC Gefl1C":A=RND(-TIMER)
60 RA$=(1)="GREAT":RA$=(2)="GOOD":
RA$=(3)="TOPS":RA$=(4)="YEAHHH":CO
LOR5,B:PMODE1,1:PCLS:DRAW"S4BMS,
20U20NG5F5":GET(0,0)-(10,20),AR,
G:PCLS:GET(0,0)-(10,20),AQ,G
70 L=22:Y2=0:S=8
80 C1$="C8R8U2R8D2R8U4R16D4R8U2R
8D2R8D3L8D2L8U2L8D4L16U4L8D2L8U2
L8U3":GOSUB150:PCOPY2TO3:DRAW"S4
BM95,165"+C1$:PAINT(97,166):LINE
(122,165)-(131,168),PRESET,BF:GO
SUB150:PCOPY2TO4
90 CLS:PRINT@261,"JUST A MOMENT
PLEASE.":SCREEN0,1
100 PCLS:DRAW"S8BM63,163"+C1$:PA
INT(65,165):LINE(119,163)-(134,1
70),PRESET,BF:GOSUB150:PCOPY2TO5
110 PCLS:DRAW"S12BM31,161"+C1$:P
AINT(32,162):LINE(114,161)-(139,
173),PRESET,BF:GOSUB150:PCOPY2TO
6
120 PCLS:DRAW"S16BM0,162"+C1$:PA
INT(2,164):LINE(110,160)-(145,17
6),PRESET,BF:GOSUB150:PCOPY2TO7
130 PCLS:C1$="C8U2R8D2R8U4R16D4R
8U2R8D7L8U2L8D2L16U2L8D2L8U2L8U3
":DRAW"S21BM0,164"+C1$:PAINT(2,1
66):LINE(103,161)-(148,191),PRES
ET,BF:GOSUB150:PCOPY2TO8
140 GOTO400
149 REM****WINDOWS OF S-SHIP****
150 DRAW"C7S4BM0,133M30,143R195M
255,133NL255BM225,143D43NR30L195
NU43L30":PAINT(35,135),7,7:PAINT
(2,189),7,7:LINE(0,103)-(255,125
),PSET,B
160 X1=2:Y1=118:C1=6:C$="KEYS
.":GOSUB170:X1=140:C$="ENTER
,HELP":GOSUB170:DRAW"C6BM57,113N
E3NF3R8BR11R8NH3NG3":RETURN
169 REM***DIVIDE UP TO PRINT****
170 IF LEN(C$)<=L THEN WS=C$:GOSU
B210:RETURN
180 FOR T=L TO1STEP-1:IF MID$(C$,T,1)="
"THEN200
190 NEXTT
200 WS=LEFT$(C$,T):GOSUB210:C$=R
IGHT$(C$,LEN(C$))-T:GOTO170
209 REM***TO GRAPHICS SCREEN***
210 DRAW"S=S:C=C1:BM"+STR$(X1)+""
,+STR$(Y1)
220 FOR I=1TOLEN(WS)
230 F=ASC(MID$(WS,I,1))-32
240 DRAWCH$(F)+"BR3"
250 NEXTI:Y1=Y1+Y2:RETURN
259 REM***GET NEW PAGE (TEXT) ***
260 PRINT@484,"PRESS <ENTER> TO
CONTINUE.":IN$=INKEYS
270 IN$=INKEYS:IF IN$>CHR$(13)
THEN270 ELSE RETURN
279 REM****HELP ASKED FOR*****
280 PUT(P,40)-(P+10,60),AQ,PSET:
IF H<HM-1 THEN310
290 IF R1=1 THEN C$="PRIME":C2$=
"ONLY TWO FACTORS." ELSE C$="COM
POSITE":C2$="MORE THAN TWO FACTO
RS."
300 C$=C$+" NUMBERS HAVE "+C2$:X
1=0:Y1=65:C1=7:GOSUB170:FORX=1TO
1500:NEXTX:LINE(0,50)-(255,95),P
RESET,BF:PUT(P,40)-(P+10,60),AR,
PSET:FORX=1TO HM:D(X)=0:NEXTX:H=
0:RETURN
310 H=H+1
320 D=RND(HM):IF D=B THEN320
330 IF D(D)=1 THEN320 ELSE D(D)=
1
340 A=0:FORX=1TO C(D)
350 IF C(D)/X=INT(C(D)/X) THEN A
=A+1
360 NEXTX
370 A$=STR$(A):X1=0:Y1=65:C1=7:Y
2=14:C$=C(D)+" HAS"+A$+" FACTOR
S.":GOSUB170
380 FORX=1TO1500:NEXTX
390 LINE(0,50)-(255,95),PRESET,B
F:PUT(P,40)-(P+10,60),AR,PSET:RE
TURN
399 REM****CHOOSE A LEVEL*****
400 C$=CHR$(128):CLS:PRINT@0,STR
INGS(5,128)+"please"+C$+"choose"
+C$+"a"+C$+"level":STRING$(6,128
):
410 FORX=1TO9:PRINT@X*32+37,STR$(
X)+" - NUMBERS TO X*10+9;:NEXTX
420 PRINT@416,STRING$(3,128)+"pl
ease"+C$+"type"+C$+"a"+C$+"numbe
r"+C$::POKE1464,40:POKE1465,49:P
OKE1466,45:POKE1467,57:POKE1468,
41:PRINT@445,STRING$(3,128);
430 IN$=INKEYS
440 IN$=INKEYS:IF IN$="" THEN440
ELSEIF ASC(IN$)<49 OR ASC(IN$)>
57 THEN440
449 REM*****WHICH KIND?*****
450 N=VAL(IN$):CLS:PRINT@0,STRIN
GS(6,128)+"please"+C$+"choose"+C
$+"a"+C$+"type"+STRING$(6,128);
460 PRINT@104,"1 - PRIME.":PRINT
@136,"2 - COMPOSITE.":PRINT@168,
"3 - A MIXTURE."
470 PRINT@256,STRING$(3,128)+"pl
ease"+C$+"type"+C$+"a"+C$+"numbe
r"+C$::POKE1304,40:POKE1305,49:P
OKE1306,45:POKE1307,51:POKE1308,
41:PRINT@285,STRING$(3,128);
480 IN$=INKEYS
490 IN$=INKEYS:IF IN$="" THEN490
ELSE IF ASC(IN$)<49 OR ASC(IN$)>
51 THEN490
500 R=VAL(IN$)
509 REM***HOW MANY ON SCREEN****
510 PRINT@384,"HOW MANY NUMBERS
WOULD YOU LIKE ON THE SCREEN AT
ONCE?":PRINT@480,STRING$(3,128)"p
lease":C$"type":C$"a":C$"number":C$"
::POKE1528,40:POKE1529,52:POKE15
30,45:POKE1531,54:POKE1532,41:PO
KE1533,32:POKE1534,32:POKE1535,3
2
520 IN$=INKEYS
530 IN$=INKEYS:IF IN$="" THEN530
ELSE IF ASC(IN$)<52 OR ASC(IN$)>
54 THEN530
540 HM=VAL(IN$)
550 GOSUB1200:CLS
560 IF R=3 THEN R1=RND(2) ELSE R

```

1=R
570 PCLS:SCREEN1,1
579 REM****PICK THE NUMBERS****
580 ON N GOTO590,600,610,620,630
,640,650,660,670
590 N1=8:N2=10:GOTO680
600 N1=10:N2=18:GOTO680
610 N1=12:N2=26:GOTO680
620 N1=15:N2=33:GOTO680
630 N1=17:N2=41:GOTO680
640 N1=19:N2=49:GOTO680
650 N1=22:N2=56:GOTO680
660 N1=24:N2=64:GOTO680
670 N1=25:N2=73
680 B=RND(HM)
690 IF R1=2 THEN770
700 FORX=1TO HM
710 C=RND(N2):C(X)=CN(C):IF X=1
THEN750
720 FORZ=X-1 TO1STEP-1
730 IF C(X)=C(Z) THEN Z=1:NEXTZ:
GOTO710
740 NEXTZ
750 NEXTX
760 C=RND(N1):C(B)=PN(C):GOTO840

770 FORX=1TO HM
780 C=RND(N1):C(X)=PN(C):IF X=1
THEN820
790 FORZ=X-1 TO1STEP-1
800 IF C(X)=C(Z) THEN Z=1:NEXTZ:
GOTO780
810 NEXTZ
820 NEXTX
830 C=RND(N2):C(B)=CN(C)
839 REM*****SET UP SCREEN*****
840 PCLS:Y2=0:PCOPY3TO2
850 DRAW"C8":LINE(0,0)-(255,14),
PSET,BF:IF R1=1 THEN C\$="PRIME"
:X1=47 ELSE C\$="COMPOSITE":X1=2
3
860 Y1=12:C1=5:C\$="PICK THE "+C2
\$::GOSUB170
870 Y1=35:FORX=1TO HM
880 IF HM=4 THEN X1=(X-1)*56+33
ELSE IF HM=5 THEN X1=(X-1)*46+25
ELSE X1=(X-1)*42+14
890 C\$(X)=STR\$(C(X)):C\$(X)=RIGHT
\$(C\$(X),LEN(C\$(X))-1):C\$=C\$(X):D
RAW"C6":LINE(X1-5,210-(X1+24,39)
,PSET,B:IF LEN(C\$(X))=1 THEN X1=X
1+6
900 C1=8:GOSUB170:NEXTX
910 IF HM=4 THEN P=39 ELSE IF HM
=5 THEN P=31 ELSE P=20
920 FORX=1TO HM:D(X)=0:NEXTX:H=0
:B=1
930 PUT(P,40)-(P+10,60),AR,PSET
939 REM****GET AN ANSWER*****
940 IN\$=INKEYS
950 IN\$=INKEYS:IF IN\$="" THEN DRA
W"C5BM212,118:XCH\$(40)":PLAYP2\$:
DRAW"C6BM212,118:XCH\$(40)":PLA
YP2\$:GOT0950
960 IF IN\$="H" THEN GOSUB280:GOT
0950
970 IF IN\$=CHR\$(8) OR IN\$=CHR\$(9
) OR IN\$=CHR\$(13) THEN PUT(P,40)
-(P+10,60),AQ,PSET ELSE950
980 IF IN\$=CHR\$(9) THEN1020 ELSE
IF IN\$=CHR\$(13) THEN1060

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990 IF HM=4 AND P=<39 THEN1050 B
LSE IF HM=4 THEN P=P-56: B1=B1-1:
GOTO1050
1000 IF HM=5 AND P=<31 THEN1050
ELSE IF HM=5 THEN P=P-46: B1=B1-1
:GOTO1050
1010 IF HM=6 AND P=<20 THEN1050
ELSE P=P-42: B1=B1-1: GOTO1050
1020 IF HM=4 AND P=>207 THEN1050
ELSE IF HM=4 THEN P=P+56: B1=B1+
1: GOTO1050
1030 IF HM=5 AND P=>215 THEN1050
ELSE IF HM=5 THEN P=P+46: B1=B1+
1: GOTO1050
1040 IF HM=6 AND P=>230 THEN1050
ELSE P=P+42: B1=B1+1
1050 PUT(P,40)-(P+10,60),AR,PSET
:GOTO950
1059 REM****EVALUATE ANSWER*****
1060 IF HM=4 THEN P1=(B1-1)*56+3
3 ELSE IF HM=5 THEN P1=(B1-1)*46
+25 ELSE P1=(B1-1)*42+14
1070 IF B1>B THEN1130
1080 FORX=1TO11:GET(P1-5,21)-(P1
+24,39),CA,G:PUT(P1-5,21)-(P1+24
,39),CA,NOT:NEXTX
1090 X1=0:Y1=75:Y2=14:C1=8:C$=RA
S(RND(4))+"." "+C$(B1)+" HAS ":" IF
R1=1 THEN C$=C$+"ONLY 2 FACTORS."
ELSE IF R1=2 THEN C$=C$+"MORE T
HAN 2 FACTORS."
1100 GOSUB170
1110 PLAYP1$: FORX=4TO8: PCOPYX TO
2:FORY=1TO30: NEXTX:NEXTX: PCOPY3
TO2:FORX=1TO1000: NEXTX: PCCLS
1120 NU=NU+1: IF NU=10 THEN NU=0:
GOTO1170 ELSE560
1130 GET(P1-5,21)-(P1+24,39),CA,
G:PUT(P1-5,21)-(P1+24,39),CA,NOT
1140 X1=0:Y1=65:Y2=14:C1=8:C$="S
ORRY. "+C$(B1)+" HAS": IF R1=1 TH
EN C$=C$+" MORE THAN TWO FACTORS
." ELSE IF R1=2 THEN C$=C$+" ONL
Y TWO FACTORS."
1150 GOSUB170:PLAYP3$:LINE(0,51)
-(255,95),PRESET,BF:Y1=75:C$="TR
Y THAT AGAIN PLEASE.":GOSUB170:F
ORX=1TO1000:NEXTX:LINE(0,60)-(25
5,78),PRESET,BF
1160 PUT(P1-5,21)-(P1+24,39),CA,
PSET:GOTO930
1169 REM****GET NEXT USER*****
1170 PCCLS:X1=0:Y1=101:Y2=14:C1=8
:C$="NEXT PLAYER. PRESS <ENTER>.
":GOSUB170:C1=7:C$="<E> TO END."
:GOSUB170:IN$=INKEY$:
1180 IN$=INKEY$:IF IN$="" THEN11
80
1190 IF IN$=CHR$(13) THEN550 ELS
E IF IN$="E" THENCLS:END ELSE118
0
1199 REM****EXPLANATION*****
1200 IF R=2 THEN1240 ELSE IF R=3
THEN GOSUB1210:GOSUB1240:RETURN
1210 CLS:PRINT"PRIME NUMBERS HAV
E ONLY TWO FACTORS. FOR EXAM
PLE, 5 IS A PRIME NUMBER BECA
USE ITS ONLY FACTORS ARE 5 AND
1."
1220 PRINT:PRINT"ZERO AND ONE
ARE NOT PRIME NUMBERS BECA
USE THEY DO NOT HAVE2 FACTORS.

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1230 PRINT:PRINT"THE PRIME NUMBE
RS LESS THAN 20 ARE :":PRINT"2
, 3, 5, 7, 11, 13, 17 AND 19":GO
SUB260:RETURN
1240 CLS:PRINT"COMPOSITE NUMBERS
HAVE MORE THAN TWO FACTORS. FOR
EXAMPLE, 8 HAS 1, 2, 4 AND 8 AS
FACTORS. THEREFORE, 8 IS A
COMPOSITE NUMBER."
1250 PRINT:PRINT"THE COMPOSITE N
UMBERS LESS THAN 20 ARE :":PRINT
:PRINT"4, 6, 8, 9, 10, 12, 14, 1
5, 16 AND 18.":GOSUB260:RETURN
1259 REM****PRIME NUMBERS*****
1260 DATA2,3,5,7,11,13,17,19,23,
29,31,37,41,43,47,53,59,61,67,71
,73,79,83,89,97
1269 REM****COMPOSITE NUMBERS****
1270 DATA4,6,8,9,10,12,14,15,16,
18,20,21,22,24,25,26,27,28,30,32
,33,34,35,36,38,39,40,42,44,45,4
6,48,49,50,51,52,54,55,56,57,58,
60,62,63,64,65,66,68,69,70,72
1280 DATA74,75,76,77,78,80,81,82
,84,85,86,87,88,90,91,92,93,94,9
5,96,98,99
1289 REM****CHARACTER DATA*****
1290 DATA BR2, BR2UBU2U2BRBD5, BU5N
DBR3DBD4, BRUNLU3NLURNURND3NLNRD
BR, BRUNLREHL2URNUR2BD4, BR3NUBL3U
E3UBL3DBD4BR3, BRHENF2HEFGBD2REBD
, BU5BRRDGBD3BR2, BR2HU3EBRBD5, BRE
, U3NR2U2R2FGFDGL2BR3, BU
U3ERFB03GLHBDBR3, U5RF2DG2LBR3, NR
3U3NR2U2R3BD5, U3NR2U2R3BD5, BUU3E
RBRBD3NLGLHBDBR3, U3NU2R3NU2D3, B
RU5BD5BR2, BUFEU4NRL2BD5BR3, U5D2R
E2G2F2D, NU5R3, U5F2NDE2D5, U5F3U3D
5
1340 DATA BRHU3ERFD3GLBR2, U5R2FDG
1,2BD2BR3, BUU3ERFD3NHNGLHBDBR3, U
5R2FGL2F3, BUFREUHL2ERFB04
1350 DATA BRU5LR3BD5, NU5R3U5BD5,
BU5D3FDRUEU3BD5, NU5E2NUF2NU5, UE2
H2BR3DGFD2, BU5D2FRD2NLU2EU2BD5, M
R3UE3UL3BD5BR3

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FOR THE GAMERS'

For those of you who are ripping your hair out trying to get past the gargoyle in Raaka Tu:

Once you have gone through the door next to the statue with the bow, if you read the description carefully, it will say that you are at the SOUTH END of a hall. Therefore, it must have a north end. After getting the candle the lamp, go to the room with the gargoyle, light the candle with the lamp, activate the gargoyle, drop the candle, leave the room and type WAIT ten (10) times. then return to the room and extinguish the candle.

*

If you can get to the chasm with the stream of lava in Trekboer, don't worry about the grating; you can't open it. The grate gets used on your way out. Also don't try crossing the bridge without the amulet.

*

For Bedlam: If you keep walking into walls, type PLUGH and you'll feel much better!

In Temple of Rom. Any treasures taken while the bat is on the screen gives double points.

*

For Black Sanctum, you'll find yourself in big trouble if you try to go in the monastery (via mirror) and don't have the robe. If trapped in the room where you can't do anything, the words on the note that the young woman is holding can get you free.

*

For Trekboer: NEVER drop the beaker. If you want to put it down, you must have the pillow and then drop the pillow, and then the beaker.

*

In Shenanigans, You can't get service in the bar without your shoes and shirt. And be sure to check your mail everyday. Your mailbox number should be the same as your door number.

STRAIGHT LINE GRAPHS

EDUCATION

16K ECB

by Mal McLaughlan

THIS SHORT tutorial, ideal for the earlier High School years, helps with the understanding of straight-line graphs. The aspect dealt with this time is the all-important slope of the graph, a key element in really coming to grips with what graphs are all about.

This leads on, in higher mathematics, to the rate of change of slope in Calculus.

But first let's get a clear understanding of straight-line graphs ...

The Listing:

```

1 *****GRAPH TUTOR*****  

*****BY MAL MC LAUGHLAN*****  

*****11 HUNTER ST., BOONAH Q*****  

*****JUNE, 1987*****  

2 GOTO 10  

3 SAVE"265:3":END'2  

4 ****A TUTORIAL FOR JUNIOR*****  

*****HIGH SCHOOL CLASSES*****  

*****straight line graphs*****  

10 CLS  

20 PRINT@5,"STRAIGHT-LINE G .PHS  

";:PRINT@64,"THIS PROGRAM SHOWS  

HOW THE GRAPH OF Y=X VARIES AS THE  

COEFFICIENT OF X VARIES.  

IT IS THIS COEFFICIENT THAT DETERMINES THE SLOPE OF THE GRAPH.  

"  

30 PRINT@235,"examples":PRINT@25  

8,"equation      graph slope  

"  

40 PRINT@291,"Y=2X  

2:1      Y=5X  

5:1      Y=3X+2  

3:1      Y=29X-36  

29:1"  

50 PRINT@453,"(any key to continue)"  

60 EXEC44539  

70 CLS0

```

```

80 FORY=4TO24STEP4  

90 SET(X,Y,5):NEXTY  

100 X=6  

110 FORY=0TO30  

120 SET(X,Y,3):NEXTY  

130 Y=27  

140 FORX=0TO50  

150 SET(X,Y,3):NEXTX  

160 Y=28  

170 FORX=10TO50STEP6  

180 SET(X,Y,5):NEXTX  

190 'SET GRAPH  

200 FORX=7TO33  

210 W=33-X  

220 SET(X,W,4):NEXTX  

230 'GRAPH Y=2X  

240 FORX=7TO20  

250 W=40-2*X  

260 SET(X,W,4):NEXTX  

270 'SET GRAPH Y=0.5X  

280 FORX=8TO60  

290 W=30-INT(.5*X)  

300 SET(X,W,4):NEXTX  

310 PRINT@6,"Y=2X";  

320 PRINT@14,"Y=X";  

330 PRINT@24,"Y=.5X";  

340 PRINT@448,"THE COEFFICIENT  

OF X SHOWS THE";:PRINT@480,"slope  

e (2:1, 1:1, .5:1 ABOVE) ";  

350 PRINT@309,"(any key)";  

360 EXEC 44539  

370 CLS0  

380 PRINT@128,"THE NEXT SHOWS Y  

=X+C, WHERE C IS CUTTING POINT OF  

Y AXIS, E.G. IF Y=X+3 THE Y AXIS  

IS CUT AT +3."  

390 PRINT@256,"BECAUSE THE COEF  

FICIENT OF X IS 1 IN ALL THESE,  

THE SLOPE IS ALWAYS 1...AND SO  

the lines are parallel..  

";  

400 PRINT@458,"(any key)";  

410 EXEC 44539  

420 CLS0  

430 'SET AXES AGAIN  

440 X=6  

450 FORY=0TO31:SET(X,Y,3):NEXTY  

460 Y=27  

470 FORX=0TO55  

480 SET(X,Y,3):NEXTX

```

490 'SET GRAPH Y=X(+0)
500 FORX=7TO33
510 W=33-X
520 SET(X,W,4):NEXT X
530 'SET GRAPH Y=X+3
540 FORX=7TO30
550 W=(33-3)-X
560 SET(X,W,4):NEXT X
570 'SET GRAPH Y=X+3
580 FORX=7TO33
590 W=(33+3)-X
600 SET(X,W,4):NEXT X
610 PRINT@353,"+3";:PRINT@418,"0
";
620 PRINT@482,"-3";
630 PRINT@40,"Y=X+3";
640 PRINT@16,"Y=X";
650 PRINT@60,"Y=X-3";
660 PRINT@256,"THE NUMBER ADDED
TO X GIVES THE Y INTERCEPT(+3, 0,
-3 HERE) ";
670 PRINT@214,"(any key)";
680 EXEC 44539
690 'SET AXES AGAIN
700 CLS0
710 X=6
720 FORY=0TO31
730 SET(X,Y,3):NEXTY
740 Y=27
750 FORX=0TO50
760 SET(X,Y,3):NEXTX
770 'SET GRAPH Y=0.5X+3
780 FORX=6TO50
790 W=20+INT(0.5*(12-X))-3
800 IF W=0 GOTO 820
810 SET(X,W,4):NEXT X
820 PRINT@146,"Y=.5X+3";
830 PRINT@289,"+3";
840 PRINT@448,"THE ABOVE GRAPH CUTS Y AXIS AT";:PRINT@480,"+3, A
ND HAS SLOPE OF .5:1 ";
850 PRINT@342,"(any key)";
860 EXEC 44539
870 CLS
880 INPUT"DO YOU WANT ANOTHER RUN
THROUGH (Y/N)";Q\$
890 IF Q\$="Y" THEN 10 ELSE 900
900 CLS(7):PRINT@200,"THAT'S ALL
FOLKS!";
910 GOTO 910

◆

BEGINNER'S BASIC

ALL SYMBOLIC
PURPOSE

INSTRUCTION
CODE



TUTORIAL by Jim Rogers

LET US START WITH a small hint. First of all it is a good idea to develop the habit of turning on your computer in a sequence.

Turn on the power, the TV, then the computer. In shutting down, do it in reverse order. Computer off, TV off, power off.

This has something to do with allowing the power to discharge but it will make your equipment last much longer.

When you first bring your new computer home and get it all set up and working as per the manual don't be afraid to play with it.

Just by pressing buttons and making lots of mistakes you will learn and you will become familiar with the keyboard and what it will do. One thing is sure, you can't do any harm.

You will find that there are two buttons at the back of the keyboard (or somewhere else on the machine. Check your manual)

One is the on/off switch and the other is the reset button.

If you use the on/off button everything in the memory is wiped out. If you use the reset button you will clear the screen of all but the cursor and the OK sign.

To check this type in LIST and you will find that the memory is intact and what was in the memory will be listed back on the screen.

When it was put together, the computer was taught and instructed to do certain things in a certain way and order and we will go into this as we go along.

Of all the languages which computers are capable of understanding, BASIC is probably the easiest for beginners like us to learn and understand as it is the one most home computers use and is more like our spoken language with just some simple words and symbols added.

About now you will want to get on with writing the first of your many programs invented and developed by yourself so that you can become a computer programmer.

First of all, you will find that, once having the cursor and the OK sign up on the screen, anything you type on the keyboard will immediately appear on the screen, but that is all.

It will just sit there and nothing else will happen. To make something happen you must give the computer a command that it will understand.

If you type in:

What is $29 + 56$

... that will appear on the screen but nothing happens.

Now, let's try your first command:

PRINT $29 + 56$

... and immediately you will get an answer: 85.

You have just used the computer as a calculator but in doing so remember that the mathematical signs are a little different.

"+" = ADD,
"-" = minus,
"*" = multiply,
"/" = divide.

Now we have learned that by using the command PRINT we can make the computer give us an answer to a problem.

If we want a phrase to be printed on the screen we use the PRINT command and the enclose the phrase in quote marks thus:

PRINT "GOOD MORNING. MY NAME IS CHARLIE".

Press ENTER and there it is on the screen. The enclosed statement is known as a STRING.

By pressing the ENTER key you have told the computer to retain the information you have keyed in in the memory.

Should you make a mistake in the typing of a command you will get a reply on the screen which says ?SN ERROR and you will have to retype that command.

So if you typed:

PRINT "Good Morning"

... you will have an ?SN ERROR in reply. Correct it to:

PRINT "Good Morning"

... and press ENTER and everything is right again.

There are two ways to clear all the bits and pieces you have so far accumulated in the memory. CLS and ENTER will only clear the screen but the on/off button will clear the memory.

After turning off, wait a short while before turning on again to allow the computer to discharge.

The easier way is to type NEW and ENTER. This will clear the

memory and should be used when changing from one program in the memory to another.

It is very good practice to key in printed programs. It, in itself, can be a good teacher but great care must be taken to copy them exactly as they are written. Leaving out a ":" or a ";" or a "*" or a "," or a "#" can alter the whole program and prevent it from working.

Start with shorter programs first and check each line carefully after typing in.

You will notice that these lines are numbered, usually in multiples of 10. The reason for this is that other lines may be added later if required.

We have covered two BASIC commands thus far, PRINT and CLS. Now a third one is INPUT and with this one we can write a small program. Try this:

```
10 PRINT "GOOD MORNING"
20 PRINT "WHO IS YOUR FRIEND?"
30 INPUT F$ 
40 PRINT "PLEAS'D TO MEET YOU "
; F$
```

Now type RUN and press ENTER and you will be asked who your friend is. Type in his name and again ENTER.

Remember to make a space between YOU and the quotes in line 40 so that YOU and the name do not run together.

Now LIST and ENTER and you will see your original LISTing appear on the screen.

Try CLS to clear the screen and LIST to bring it back on. Then press the reset button and bring the program back with LIST.

Now type RUN and the program will start over again.

Try this program with your own words, add some more to it, make some mistakes and then retype the lines correctly. To change or correct a line it is only necessary to retype it under the same line number at the bottom of the listing and you will find that it is automatically placed in the correct sequence.

Our list of BASIC commands is now:

PRINT, CLS, ENTER, RUN, INPUT and LIST.

If you have any queries or problems please ask. There are experts here to answer your questions and I don't mean me.

⊕

PLAYER ONE

For those of you who are wondering, photos of your high scores are welcome, but they must be clear and the subject needs to fill the whole photo.

If you're into photography, this is the best way to obtain a photo of your high scores:

* You should take the photo in a dark room with only the TV or monitor on using a low shutter speed, tripod, and NO flash.

* I recommend a shutter speed of 1/8 of a sec or less. (The reason for this is that TV's flickers at high speeds, and if you take a photo at a high speed you will more than likely catch a flicker in with your shot, ie part of the screen is blank in your photo, whereas on a low speed the shutter will be open for a number frames to flick by on your TV.)

This will ensure that your shot will have the whole screen, but this method is only effective on non-moving screens.

* If the screen flickers different frames by while the shutter is open, you'll end up with an overlay of all the different frames (better known as a blear).

I need some help in BLACK SANCTUM!! How do you get past the door that is nailed shut!?!? And what is the organ used for? If anyone knows Please tell me!!

You all have work hard since this column started, to accumulate such a large list of extremely high scores. But many of the top scores have remained unchanged for some time.

To create a bit more competition and give other players a chance to get onto Player 1, we were thinking of clearing Player 1 and starting from scratch.

We would like to know your opinion on this idea, so please write in or drop us a line before December 10th and let us know what you think.

Michael.

Here's a letter sent in by Brian Joyce of Canberra.

Dear Michael,

I have the answer to "Dungeons of Daggorth"!

First I want to tell you that I have cleared the lot. When you start you have to get the Vulcan Ring first. On the second level, you get a Rime Ring.

Don't incant them until the third level. I suggest that before you go down to the second level, you kill the two 'blobs'.

Off one blob you get an Iron Sword, off the other you get a Vulcan Ring.

Also get a few spare torches, then go down. Remember, the more creatures you kill, the more powerful you get.

Save both rings to use on the wizard (the imaginary one). Both rings can be used three times. When you encounter the wizard, make him chase you into a long corridor. Get one of your rings and incant it.

Leave your sword in your hand - you might encounter other creatures.

When the wizard is in your room, use your ring, run down the other end of the corridor and wait for your heart to slow down (you might have to go for another run back to the other end!).

It takes five or six shots with both of the rings to kill the imaginary wizard.

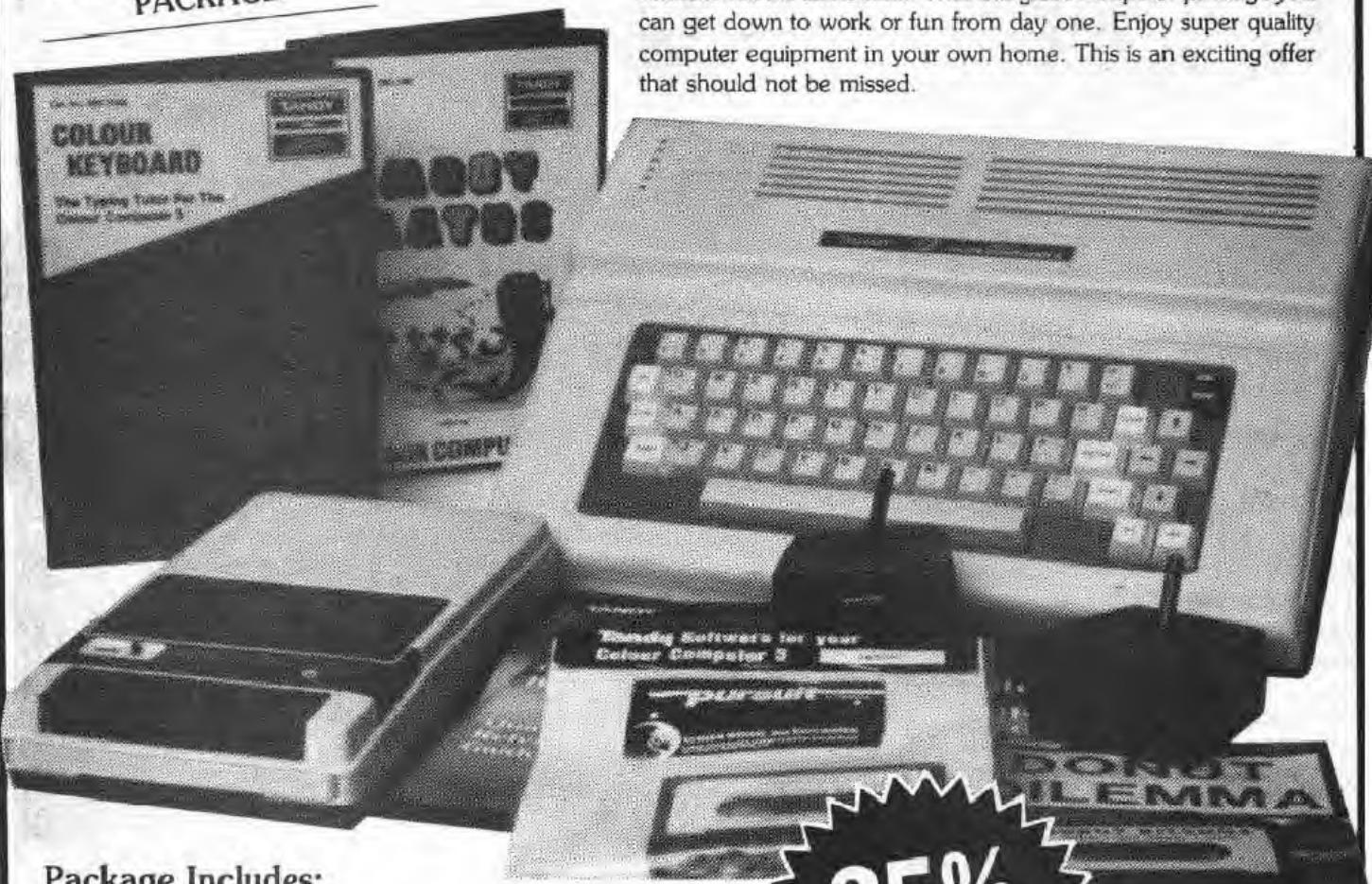
In the book, it says that they think the real wizard lives below the level 3. That's correct. After you kill the imaginary wizard, you go to the forth level. The real wizard is on the fifth level. You win after you kill the him with a ring you get on the forth level.

And the rest, you clobber them with your sword. After you kill the real wizard, you go back to having a pine torch. There is a ring on the floor where the wizard was killed. Incant it, and the game ends.

⊕

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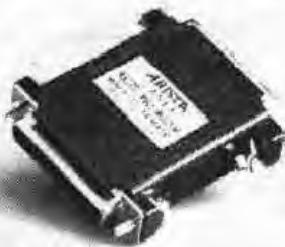
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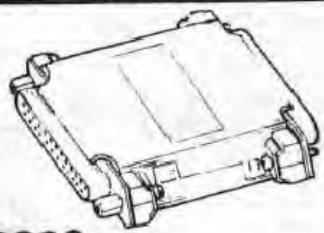
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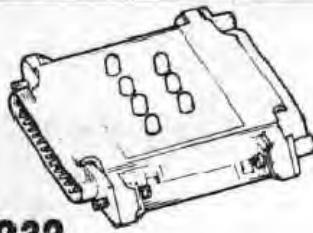
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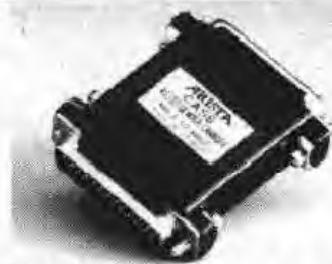
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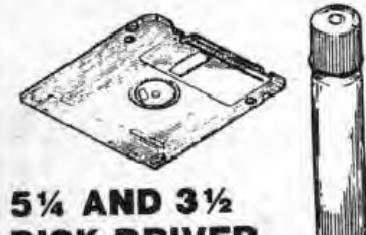
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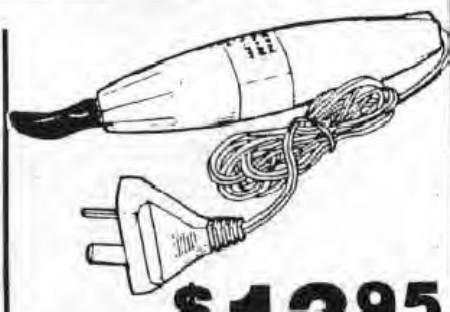
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FOOTY JUMPERS

by David Dyson

CoCo 3
GRAPHICS



FOOTY JUMPER: SINCE Joy Wallace did "Footy Fever", I did something like that. This program draws all the 14 teams in the league jumpers, using Joy's Palettes she used in her program.
Enjoy!

The Listing:

```

0 GOTO 10
1 '***FOOTY JUMPERS***'
2 '**((C) 1987**'
3 SAVE"308B:3":END'6
10 WIDTH40
20 CLS RND(8)
22 POKE65497,0
25 PALETTERGB
26 ON BRK GOTO 380
30 PRINT"***** ***** ***** *****"
*   "
40 PRINT"*      *      *      *      *"
*   "
50 PRINT"***      *      *      *      *"
*****"
60 PRINT"*      *      *      *      *"
*   "
70 PRINT"*      ***** *****      *"
*
80 LOCATE0,7
100 PRINT"      *      *      *      *      *"
*** ***** *****
110 PRINT"      *      *      *      **      **"
*   *   *   **
120 PRINT"      *      *      *      ***      *"
*   ***      *   **
130 PRINT"**      *      *      *      *      *      *"
*** ***      *****
140 PRINT" *      *      *      *      *      *"
*   **      *   "

```

```

150 PRINT" * ***** - * *
    *** ** *"
160 PRINT:PRINT" BY DAVID N.L.
    DYSON ":"PRINT" & ADAM R. DYS
ON":PRINT" (C) 1987"
170 PRINT" PRESS ANY KEY TO
    START"
180 I$=INKEY$: IF I$="" THEN 180
185 PALETTERGB:PALETTE2,11:PALET
TE0,63:PALETTE9,29:PALETTE14,7:P
ALETTE10,34:PALETTE12,8:PALETTE6
,32:PALETTE5,29
186 GOSUB 400
200 'EAGLES
201 HSCREEN2:HCLS11:HCOLOR8:GOSU
B350
202 HDRAW"BM88,72;M+4,+8M+2,+12M
-2,+8BM104,72M+8,+18M+2,+4D16;M-
1,+4M-3,+12M-4,+6BM184,72M-4,+12
D12BM168,72M-8,+20D20M+4,+12M+2,
+6"
203 HDRAW"BM116,120;M+8,-12M+12,
-10M+8,-2R4M+4,+1M+2,+4M-2,+8M-1
,-4L4G4D7F4L16M+12,-12"
204 HDRAW"BM132,120M+12,-24BM116
,120R16BM136,98M+4,+4BM136,98M+2
,+10
205 HPAINT(136,136),1,8:HPAINT(2
00,75),1,8:HPAINT(64,80),1,8:HPA
INT(172,96),12,8:HPAINT(96,96),1
2,8:HPAINT(148,104),1,8:HPAINT(1
32,108),12,8:HPAINT(140,116),12,
8:HPAINT(140,101),12,8
206 HPAINT(236,80),12,8:HPAINT(3
6,76),12,8:HPAINT(116,80),12,8:H
PAINT(156,80),12,8
207 HPRINT(10,23),"EALGES JUMPER
"
208 I$=INKEY$: IF I$="" THEN 208
210 'BEARS
211 HSCREEN2:HCLS11:HCOLOR8:GOSU
B350:HPAINT(136,116),6,8
212 HDRAW"BM68,72;D16R4U16R4D16R
4U16R8D16BM208,72;D16L4U16L4D16L
4U16L8D16BM92,96,R88
214 HDRAW"BM136,96M+8,+16L16M+8,
-16BM128,114M125,118M132,118D2M1
24,120M-1,+4R8E4U2M132,114M128,1
14BM134,115R6M+4,+1D6;M140,124;L
8BM136,120R4U2L4"
215 HDRAW"BM123,124M-3,+4R8F1D2G
1L8M-1,+4R20U8M-16,-4"
216 HDRAW"BM134,126;R14F4D4G2L12
BM140,132R4U2L4"
217 HPAINT(148,104),1,8:HPAINT(2
12,80),1,8:HPAINT(56,80),1,8:HPA
INT(201,80),1,8:HPAINT(194,80),1
,8:HPAINT(84,80),1,8:HPAINT(74,8
0),1,8
218 HPAINT(36,80),6,8:HPAINT(112
,76),1,8:HPAINT(156,80),1,8:HPAI
NT(232,80),6,8:HPRINT(10,23),"BR
ISEBANE BEARS JUMPER"
219 I$=INKEY$: IF I$="" THEN 219
220 'GEELONG
221 HSCREEN2:HCLS11:HCOLOR8:GOSU
B350:HDRAW"BM48,72D16R8U16R8D16R
8U16R8D16R8U16;BM184,72D16R8U16R
8D16R8U16R8D16R8U16;BM92,96R90;B
M178,104L84;BM98,112R76BM171,120
,L70;BM104,128R64;BM164,136L56;B
M112,144R50"
222 FORD=1TO44STEP16:HPAINT(52+D
,80),12,8:HPAINT(188+D,80),12,8:
NEXTD
223 FOR D=1TO48STEP16:HPAINT(136
,100+D),12,8:NEXT
224 HPAINT(136,146),12,8:HPAINT(
36,80),12,8:HPAINT(112,76),12,8:
HPAINT(156,80),12,8:HPAINT(236,8
0),12,8:HPRINT(10,24),"GEELONGS
JUMPER"
225 I$=INKEY$: IF I$="" THEN 225
230 'RICHMOND
231 HSCREEN2:HCLS11:HCOLOR8:GOSU
B350
232 HDRAW"BM92,96M140,148R20M112
,96L20":HPAINT(136,100),8,8:HPAI

```

NT(120,136),8,8:HPAINT(40,80),1,
 8:HPAINT(112,76),1,8:HPAINT(160,
 76),1,8:HPAINT(236,76),1,8
 233 HPRINT(108,104),1,8
 234 HPRINT(10,20),"RICMONDS JUMP
 ER"
 235 I\$=INKEY\$: IF I\$="" THEN 235
 236 ' ESSENDON
 237 HSCREEN2:HCLS11:HCOLOR8:GOSU
 B350:HDRAW"BM92,96M140,148R20M11
 2,96L20":HPAINT(136,100),8,8:HPA
 INT(120,136),8,8:HPAINT(40,80),6
 ,8:HPAINT(112,76),6,8:HPAINT(160
 ,76),6,8:HPAINT(236,80),6,8:HPA
 NT(116,116),6,8
 238 HPRINT(10,23),"ESSENDONS JUM
 PER"
 239 I\$=INKEY\$: IF I\$="" THEN 239
 240 GOTO250
 243 FORD=44TO84STEP8:HLINE(D,72)
 -(D,88),PSET:NEXT:FORD=188TO228S
 STEP8:HLINE(D,72)-(D,88),PSET:NEX
 T
 244 HDRAW"BM92,96;M180,96L8D20U2
 0L8D4U0L8D52U52;M92,96R8D20U20
 R8D4U40"
 245 FORD=116TO156STEP8:HLINE(D,9
 6)-(D,148),PSET:NEXT
 246 FOR D=1TO40STEP16:HPAINT(48+
 D,80),R,8:HPAINT(192+D,80),R,8:N
 EXT
 247 FOR S=96TO176STEP16:HPAINT(S
 ,100),R,8:NEXT:HPAINT(112,76),R,
 8:HPAINT(160,76),R,8
 248 RETURN
 249 'NTH MELBORNE
 250 HSCREEN2:HCLS11:HCOLOR8
 251 R=9
 252 GOSUB350
 253 GOSUB243
 254 HPRINT(10,24),"NTH. MELBOURN
 ES JUMPER"
 255 I\$=INKEY\$: IF I\$="" THEN 255
 256 HSCREEN2:HCLS11:HCOLOR8:R=8:
 GOSUB350:GOSUB243
 257 HPRINT(10,24)."COLLINGWOODS
 JUMPER"
 258 I\$=INKEY\$: IF I\$="" THEN 258
 260 HSCREEN2:HCLS11:
 261 GOSUB350:R=10:GOSUB243:FORD=
 1TO28STEP16:HPAINT(56+D,80),1,8:
 HPAINT(220-D,80),1,8:NEXT:FORD=1
 04TO176STEP16:HPAINT(D,100),1,8:
 NEXT:HPAINT(36,80),1,8:HPAINT(23
 2,80),1,8
 262 HPRINT(10,24),"HAWTHORNS JUM
 PER"
 263 I\$=INKEY\$: IF I\$="" THEN 263
 264 ' CARLTON
 265 HSCREEN2:HCLS11:HCOLOR8:GOSU
 B350
 266 HCIRCLE(132,120),20,8,1,.15,
 .90:HCIRCLE(132,120),18,8,1,.15,
 .90:HCIRCLE(132,120),9,8,1,.15,.
 90:HCIRCLE(132,120),7,8,1,.15,.9
 0
 267 HDRAW"BM130,120U24R8D2L6D20R
 4D2L4D22L2U24"
 268 HPAINT(160,112),12,8:HPAINT(
 120,116),12,8:HPAINT(128,120),12
 ,8:HPAINT(112,76),12,8:HPAINT(16

0,76),12,8
 269 HPRINT(10,24),"CARLTONS JUMP
 ER"
 270 I\$=INKEY\$: IF I\$="" THEN 270
 271 'FITZROY
 272 HSCREEN2:HCLS11:HCOLOR8:GDSU
 B350
 273 HDRAW"BM92,96C8;R88":HPAINT(
 132,116),1,8
 274 HCIRCLE(132,120),20,8,1,.15,
 .90:HCIRCLE(132,120),17,8,1,.15,
 .90:HDRAW"BM148,108C8;G2;BM142,1
 32F2":F\$="U24R8D2L6D20R4D2L4D22L
 2U24"
 275 HDRAW"BM124,120C8;" +F\$+"BM13
 6,120"+F\$
 276 HPAINT(108,100),6,8:HPAINT(1
 34,98),6,8:HPAINT(132,120),6,8:H
 PAINT(120,120),6,8
 277 HPAINT(168,88),12,8:HPAINT(2
 32,80),6,8:HPAINT(36,80),6,8:HPA
 INT(112,76),6,8:HPAINT(160,76),6
 ,8
 279 HPRINT(10,24),"FITZROYS JUMP
 ER"
 280 I\$=INKEY\$: IF I\$="" THEN 280
 281 HSCREEN2:HCLS11:HCOLOR8:GOSU
 B350
 282 HDRAW"BM96,108C8;M176,108;BM
 174,110;M98,110"
 283 HDRAW"BM106,132;M166,132BM10
 6,134;M166,134":HPAINT(96,84),12
 ,8:HPAINT(132,144),12,8:HPAINT(1
 28,128),6,8:HPAINT(112,76),6,8:H
 PAINT(160,76),6,8:HPAINT(36,80),
 6,8:HPAINT(232,80),6,8:HDRAW"BM6
 0,72D16R2U16R16D16R2U16BM212,72D
 16L2U16L16D16L2U16":
 284 HPAINT(61,80),11,8:HPAINT(79
 ,80),11,8:HPAINT(64,80),6,8:HPA
 INT(211,80),11,8:HPAINT(193,80),1
 1,8:HPAINT(205,80),6,8:HPRINT(10
 ,24),"FOOTSCRAYS JUMPER"
 285 I\$=INKEY\$: IF I\$="" THEN 285
 286 'ST KILDA
 287 HSCREEN2:HCLS11:HCOLOR8:GOSU
 B350
 288 HDRAW"BM92,96;R88":HLINE(120
 ,96)-(152,148),PSET,B:HPAINT(104
 ,100),6,8:HPAINT(164,100),8,8:H
 PAINT(52,80),8,8
 289 HPRINT(10,24),"ST. KILDAS JU
 MPER"
 290 I\$=INKEY\$: IF I\$="" THEN 290
 291 'SYDNEY'
 292 HSCREEN2:HCLS11:HCOLOR8:GOSU
 B350
 293 HDRAW"BM92,72M125,110U8;M132
 ,110U3M130,102M138,110M140,104M1
 36,100M142,104M144,108M144,108M1
 48,104R2M180,72"
 294 HPAINT(124,96),3,8:HPAINT(36
 ,80),3,8:HPAINT(232,80),3,8
 295 HPRINT(10,24),"SYDNEYS JUMPE
 R"
 296 I\$=INKEY\$: IF I\$="" THEN 296
 297 'MELBOURNE
 298 HSCREEN2:HCLS11:HCOLOR8:GOSU
 B350
 299 HDRAW"BM104,72M136,120M168,7
 2":HPAINT(136,100),6,8:HPAINT(13

6,136),12,8:HPAINT(36,80),6,8:H
 PAINT(232,80),5,8:HPAINT(112,76),
 12,8:HPAINT(150,76),12,8
 300 HPRINT(10,24),"MELBOURNES JU
 MPER"
 310 I\$=INKEY\$: IF I\$="" THEN 310
 320 HSCREEN2:HCLS11:HCOLOR8:FORD
 =1TO100:HPRINT(15,15),"THE END "
 :PALETTE8,RND(64):NEXTD:END
 340 ' JUMPER
 349 GOTO349
 350 HDRAW"BM32,72;R12D16L12U16R8
 4F20E20R84D16L12U16D16L44;M160,1
 48L48;M88,88L44"
 360 HDRAW"BM114,72;F20E20R12G16H
 6":HDRAW"BM104,72:F16E6"
 370 HDRAW"BM98,84;M+4,-2M+4,+2D4
 G4H4V4"
 375 RETURN
 380 PALETTERGE:POKE65496,0:WIDTH
 32:END
 400 HSCREEN2:HCLS12:HCOLOR11
 410 OS="E8R28G8L28D36R28U36E8D36
 G8U28BL8L12D20R12U20L8D16G4E4R8"
 420 HDRAW"BM32,8E8R24G8L24D36R12
 E4U8L4D12U12R8E4U8G4E4L12D4R8D8L
 8B8U8R12U8E8D8G8BM68,8"+OS
 425 HDRAW"BM108,8"+OS
 430 HDRAW"BM156,8E8R36G8L36D8R16
 D28R8U28R12U8E8D8G8L4D20G8BM204,
 8E8R8G8L8D20R12D16R8U16R12U20L8D
 12L16U12E8D12G8E8R8U4E8R8G8L8R8E
 8D20G8L4D8G8"
 440 HDRAW"BM14,56E8R8G8L8D20G4U1
 2G8F4L4H4L12E8R12G8L12D8F12R12
 E16U32G8D32"
 450 HDRAW"BM68,56E8R8G8L8D40R32U
 40L8E8R8G8E8D40G8L16BU8U40G8D32R
 16U32BM112,56E8R8G8L8D40R8U20F8E
 8D20R8U40E8L8G8R8L8G8H8B8D16BM15
 2,48D40G8L8U20G8D4G8"
 460 HDRAW"BM156,56E8R28G8L28D40R
 8U20R20U20L28BF8R12D4L12U4R4G4BD
 8R8D12G8BM192,48D20G8"
 470 HDRAW"BM196,56E8R28G8L28D40R
 28U8L20U8R8U8L8U8R20U8E8D8G8L4G8
 E8D8G8R20G8E8D8G8"
 480 HDRAW"BM236,56;E8R32G8L32D40
 R8U20R8D12G8U20R8M+8,+20R8U16H4L
 4M+8,+20BM236,56R32E8D20G8U20D20
 L4R4BH8U4L16D4E4G4R16"
 490 HDRAW"BM12,108R28D20G8L12H8U
 20"
 500 HPRINT(2,12),"VFL"
 510 HCIRCLE(26,116),5,6,2
 520 HPAINT(26,116),6,6:HDRAW"BM1
 6,120R4F6E6R4G10H10"
 530 HPAINT(26,128),11,11
 540 HPRINT(2,17),"Footy Jumper i
 s a programme that draws":HPRINT
 (2,18),"all the fourteen football
 teams":HPRINT(2,19),"All so th
 e new jumper for":HPRINT(2,20),"
 the sydney swans"
 550 HPRINT(2,21)," PRESS ANY
 KEY"
 560 IF INKEY\$="" THEN 560
 570 RETURN
 4000 GOTO4000

Φ

WRITTEN 123⁴⁵ 789⁰ WORKSHEET

by Bob Horne

32K + printer
EDUCATION

THIS PROGRAM prints out a worksheet of numbers in word form. Allowance is made for 4, 5 or 6 digit numbers.

Most numbers generated will have a zero somewhere in them. This was done so as to leave room for the answer at the end of the line when doing 6-digit numbers.

The printer codes are for a Tandy DMF-105 and are documented with REM's throughout the program. If your printer will not print block graphics, delete line 60 and delete the "GOSUB520" in line 430.

This sub-routine prints a pattern at the top and bottom of the sheet and is not critical for the rest of the program.

The Listing:

```

1 REM*****WRITTEN NUMBERS ****
2 REM*      WORK SHEET      *
3 REM*      BY BOB HORNE    *
4 REM*      ****
5 REM***** ****
6 GOTO10
7 SAVE"309E:3":END'2
10 DIMUS(19),TS(9),AN(32)

```

```

20 FORX=1TO19:READUS(X):NEXTX:PO
RX=1TO9:READTS(X):NEXT
30 CLS:PRINT@160,"HOW MANY DIGIT
S IN THE NUMBERS?",,"UP TO 4 DI
GITS.",,"UP TO 5 DIGITS.",,"UP T
O 6 DIGITS.",,"TYPE A NUMBER 4 -
6":INS=INKEYS
40 INS=INKEY$:IF INS="" THEN40 E
LSE IF INS<"4" OR INS>"6" THEN40
50 IN=VAL(INS):DI=6-VAL(INS):CLS
:PRINT@256,"NOW PRINTING NUMBERS
.":Q=20
60 GOSUB520
68 REM * PRINTER CODES *
69 REM* CHR$(27);CHR$(14); SET
DOUBLE WIDTH * CHR$(27);CHR$(15)
TURN IT OFF * CHR$(15) TURN ON
UNDER- LINE * CHR$(14) TURN OFF
UNDERLINE *
70 PRINT#-2,CHR$(27);CHR$(14); "N
AME";CHR$(27);CHR$(15);:PRINT#-2
,CHR$(15);STRINGS(30,32);CHR$(14)
;
80 N=RND(-TIMER):SH=TIMER
90 PRINT#-2,"SHEET NUMBER"SH:PRI
NT#-2,"Write these numbers in di
gital form :-":PRINT#-2
100 FORZ=1TO Q
110 FORX=1TO5:N=RND(10)-1:NS=STR
S(N):NS=RIGHTS(NS,1):NS(X)=NS:HE
XTX:N=RND(9):NS=STRS(N):NS(6)=RI
GHTS(NS,1)
120 FORTI=0TO DI:NS(TI)="0":NEXT
TI:TI=RND(IN-1):NS(TI)="0"
130 WNS="":ANS="":FORX=1TO6:ANS=
ANS+NS(X):NEXTX
139 REM*****1ST DIGIT*****
140 IF NS(1)="0" THEN160
150 WNS=WNS+US(VAL(NS(1)))+" hun
dred and "
159 REM*****2ND DIGIT*****
160 IF NS(1)="0" AND NS(2)="0" T
HEN220
165 IF NS(2)="0" AND NS(3)="0" T
HEN VNS=LEFTS(VNS,LEN(VNS)-5):GO
TO220
170 IF NS(2)="0" THEN220
180 IF NS(2)="1" THEN DS=NS(2)+N
S(3):WNS=WNS+US(VAL(DS)):GOTO250
190 WNS=WNS+TS(VAL(NS(2)))
200 IF NS(3)="0" THEN220
210 WNS=WNS+"-"
219 REM*****3RD DIGIT*****
220 A=0:FORX=1TO3:IF NS(X)="0" T
HEN A=A+1:NEXTX ELSE NEXTX
230 IF A=3 THEN270
240 WNS=WNS+US(VAL(NS(3)))
250 WNS=WNS+" thousand"
260 IF NS(4)="0" THEN WNS=WNS+" "
and ":"GOTO310 ELSE WNS=WNS+", "
269 REM*****4TH DIGIT*****
270 A=0:FORX=1TO4:IF NS(X)="0" T
HEN A=A+1:NEXTX ELSE NEXTX
280 IF A=4 THEN320
290 IF NS(4)="0" THEN320
300 WNS=WNS+US(VAL(NS(4)))+" hun
dred and "
310 IF NS(5)="0" THEN380
319 REM*****5TH DIGIT*****
320 A=0:FORX=1TO5:IF NS(X)="0" T
HEN A=A+1:NEXTX ELSE NEXTX
330 IF A=5 THEN380
340 IF NS(5)="1" THEN DS=NS(5)+N
S(6):WNS=WNS+US(VAL(DS)):GOTO390
350 VNS=WNS+TS(VAL(NS(5)))
360 IF NS(6)="0" THEN390
370 WNS=WNS+"-"
379 REM*****6TH DIGIT*****
380 WNS=WNS+US(VAL(NS(6)))
390 AS=LEFTS(WNS,1):A=ASC(A$)-32
:MIDS(WNS,1,1)=CHR$(A):WNS=WNS+
." AN(Z)=VAL(ANS)
400 PRINT#-2,USING"##";Z::PRINT
#-2," ";WNS;
410 PO=80-POS(-2):IF PO>12 THEN
PO=12
420 PRINT#-2,CHR$(15);STRINGS(PO
,32);CHR$(14)::PRINT#-2:PRINT#-2
430 NEXTZ:GOSUB520
440 CLS:PRINT@256,"NOW PRINTING
ANSWERS"
450 PRINT#-2:PRINT#-2,"ANSWER SH
EET"SH
460 FORZ=1TO Q STEP4:PRINT#-2,TA
B(1)::PRINT#-2,USING"##";Z::PRI
NT#-2," ":"PRINT#-2,USING#####
;AN(Z);
470 PRINT#-2,TAB(20)::PRINT#-2,U
SING"##";Z+1::PRINT#-2," ":"PRI
NT#-2,USING#####;AN(Z+1);
480 PRINT#-2,TAB(40)::PRINT#-2,U
SING"##";Z+2::PRINT#-2," ":"PRI
NT#-2,USING#####;AN(Z+2);
490 PRINT#-2,TAB(60)::PRINT#-2,U
SING"##";Z+3::PRINT#-2," ":"PRI
NT#-2,USING#####;AN(Z+3):NEXT
Z
500 CLS:PRINT@256,"RUN AGAIN <Y/
N>":INS=INKEYS
510 INS=INKEY$:IF INS="" THEN510
ELSE IF INS="Y" THEN RUN ELSE I
F INS="N" THEN END ELSE510
519 REM***CHR$(27);CHR$(28) TURN
ON BLOCK PRINTING MODE****
520 PRINT#-2,CHR$(27);CHR$(28);
530 FORX=1TO8:PRINT#-2,CHR$(235)
;CHR$(236);CHR$(234);CHR$(231);C
HR$(233);CHR$(235);CHR$(231);CHR
$(231);CHR$(231);CHR$(233)::NEXT
X:PRINT#-2
540 FORX=1TO8:PRINT#-2,CHR$(233)
;CHR$(231);CHR$(226);CHR$(225);C
HR$(233);CHR$(233);CHR$(236);CHR
$(234);CHR$(225);CHR$(233)::NEXT
X:PRINT#-2
550 FORX=1TO8:PRINT#-2,CHR$(231)
;CHR$(231);CHR$(231);CHR$(231);CHR
$(225);CHR$(231);CHR$(231);CHR
$(226);CHR$(231);CHR$(225)::NEXT
X:PRINT#-2:PRINT#-2,CHR$(27);CHR
$(54);
559 REM***CHR$(27);CHR$(54) TURN
OFF BLOCK PRINTING MODE****
560 PRINT#-2:RETURN
570 DATAone,two,three,four,five,
six,seven,eight,nine,ten,eleven,
twelve,thirteen,fourteen,fifteen,
sixteen,seventeen,eighteen,nine
teen580 DATA,twenty,thirty,forty,
fifty,sixty,seventy,eighty,nine
ty

```



BIKE SAFETY

By Nicholas Fuller

BIKE SAFETY WAS a program I found inspiration for after escaping, without injury, when I had a nasty accident with a Jaguar (the bike was a write off).

There have been a few programs written with the aim of teaching children to recognize road signs for the CoCo 2, but this program, utilising the full 128K of the CoCo 3, goes much further than this.

Written in Basic, "Bike Safety" is designed not to only make people aware of the rules of the road, etc, but to educate them on the different parts of the bike, how they function, and what purpose they fulfil. It attempts to do this using the superior graphics ability of the computer, presented in an attractive manner.

About The Program

First of all, let me advise you not to press the reset button when operating the program - the program will crash!

After you've typed the program in (and have saved it to tape or disk -ed.), you are presented with a title page where you enter your name.

After this, you advance to see a traffic light. When it turns green you are allowed to enter the main menu.

In the main menu, you have two options - 1 to quit or 2 to start again.

Pressing the button on the joystick when the bike reaches the red sign will make your selection.

To start again, move the joystick to the centre or forward position.

If you decide to start again you will find yourself in a garage with the task of putting together a bicycle - it is a good idea to have a pen and paper handy to write down the position of the letters on the screen.

If you successfully construct the bike your status report is given and you advance to screen two.

Screen two presents you with a menu of 10 items, each one based on a different lecture.

Section three is an adventure called, "Dangerous Riding", which emphasises what you have learned in the a game - which is followed by the last part of the program - yes, that's right, a test!

In this section, enter your own questions and add your own printout routine.

I hope you enjoy this program (my first), and are able to learn something from it. It would be particularly useful for teachers and parents or anyone wanting to learn some of the

EDUCATION COCO 3 + JOYSTICK

techniques I have incorporated in this program.

Enough writing - let's get busy and type it in!

Ed's note: type in PMODE0:PCLEAR1 before attempting to do anything with this program - it is about 22K long. Alternatively, you could always get this months Softgold on tape.

The Listing:

```

0 GOTO20
1 ***** BIKE SAFETY *****
     **** NICHOLAS FULLER *****
3 SAVE"316:3":END'2
20 GOTO 40
30 POKE65496,0:END
40 ON BRK GOTO 60
50 GOTO 70
60 CLS2:PRINT"STOP CHEATING !":A$=INKEY$:IF A$="" THEN 60 ELSE8
80 HBUFF1,687:HBUFF2,687
80 GOTO 120
90 PLAY"T255V1501":FORA=1TO15:PL
AY"CDCDCDCDCDCDCDCDCDCCCV-":NEXTA
:PLAY"T25502V1":FORZ=1 TO 30:PLA
Y"GFEDCGFEDCGFEDCFV+":NEXTZ:RETU
RN
100 FORT=1TO640:NEXTT:SOUND1,1:R
ETURN
110 LPOKE516158,RND(63):POKE6549
7,0
120 PALETTE CMP
130 WIDTH40:CLS2:LOCATE12,5:ATTR

```

2,4,B,U:PRINT"***BIKE SAFETY***"
 ";:ATTR3,1:PRINT:LOCATE6,15:ATTR
 3,2:PRINT"Written By Nicholas F
 uller";:LOCATE13,17:ATTR 5,1:LOC
 ATE2,20:PRINT"An Educational Gam
 e on";:ATTR 4,5,U:PRINT"ROAD SAF
 ETY!!"::ATTR 3,1:PRINT:PRINT
 140 GOSUB 90:PALETTE15,33:ATTR 7
 ,1:INPUT"ENTER YOUR NAME TO CONT
 INUE":A\$
 150 FORY=1TO63:PALETTE1,RND(63):
 PALETTE5,RND(63):PALETTE8,RND(63)
):PALETTE11,RND(63):PALETTE2,RND
 (63):PALETTE4,RND(63):PALETTE7,R
 ND(63):PALETTE15,RND(63):PALETTE
 0,RND(63):PALETTE13,RND(30):PALE
 TTE12,RND(30):LPOKE516158,RND(63)
):F=F+1:IFF=40THEN170:NEXTY
 160 GOTO 150
 170 ATTR4,2:LOCATE0,22:PRINT"PRE
 SS ANY KEY TO CONTINUE":I\$=INKEY
 \$
 180 I\$=INKEY\$:IF I\$=""THEN180 EL
 SE 190
 190 HSCREEN 2:PALETTE CMP:PALETT
 E 0,53:HCLS1:HCOLOR8,8
 200 HLINE(0,100)-(320,100),PSET
 210 HDRAW"BM230,19;C4E10R30G10E1
 0D81G10"
 220 HLINE(230,20)-(260,100),PSET
 ,B:HLINE(229,19)-(261,100),PSET,
 B:PALETTE11,43:HPAINT(232,21),11
 ,4:HCIRCLE(245,35),12,4:HPAINT(2
 45,35),3,4:GOSUB100:HCIRCLE(245,
 60),12,4:PALETTE85,50:HPAINT(245,
 65),5,4:GOSUB100:HCIRCLE(245,85)
 ,12,4:PALETTE14,18
 230 HPAINT(245,86),14,4
 240 PALETTE 5,50:HPAINT(245,65),
 5,4:GOSUB100:HCIRCLE(245,85),12,
 4:PALETTE 14,18:HPAINT(245,86),1
 4,4
 250 HPRINT(20,05),"STOP"
 260 PALETTE 15,61:HDRAW"BM230,19
 ;C4E10R31G10E10D81G10":HPAINT(23
 5,16),11,4:HPAINT(265,24),11,4:H
 DRAW"BM245,100;C4D70R10U70D70E5U
 65":HPAINT(246,101),15,4:HPAINT(
 258,109),15,4
 270 FORT=100TO195STEP 15:A=0:B=3
 20:HLINE(A,T)-(B,T),PSET:NEXTT:F
 ORE=1 TO320 STEP25:G+C+20:H=100:
 X=192:HLINE(G,H)-(E,X),PSET:NEXT
 E:HPAINT(0,0),RND(15),4
 280 HPRINT(5,0),"**WELCOME TO B
 IKE SAFETY**":HPRINT(5,1),""+A\$
 290 PALETTE4,56:PALETTE4,32:PALE
 TTE4,3:PALETTE4,56
 300 HPRINT(20,07),"READY":GOSUB1
 00:HPRINT(20,09),"GO"
 310 FORT=1 TO15:A=RND(63):PALETT
 E1,A:PALETTE0,RND(63):FORT=1 TO1
 00:NEXTT:NEXTR
 320 GOTO 340
 330 HBUFF1,687:HBUFF2,687
 340 HSCREEN2:PALETTEROB:HCOLOR4,
 1
 350 PALETTE 0,0
 360 HLINE(0,50)-(50,45),PSET:HLI
 NE-(100,55),PSET:HLINE-(192,50),
 PSET:HLINE-(197,40),PSET:HLINE-(
 230,50),PSET:HLINE-(270,35),PSET
 :HLINE-(320,50),PSET
 370 FORT=1 TO 40:S=RND(320):R=RN
 D(35):HSET(S,R,4):A=RND(45):B=RN
 D(280):HSET(B,1,4):HSET(S,A,4):H
 SET(S,R,4):NEXTT
 380 HLINE(0,125)-(320,125),PSET:
 PALETTE 9,43:HPAINT(5,115),9,4
 390 PALETTE0,0
 400 HCIRCLE(30,150),20,13:HCIRCL
 E(30,150),19,13:PALETTE 13,16:HC
 IRCLE(100,150),20,13:HCIRCLE(100
 ,150),19,13
 410 HLINE(30,150)-(35,120),PSET:
 HLINE-(90,120),PSET:HDRAW"BM100,
 150:H5U25":HLINE-(60,155),PSET:H
 LINE-(30,150),PSET:HLINE(60,155)
 -(35,120),PSET:HCIRCLE(30,150),4
 ,5:HCIRCLE(30,150),3,5
 420 F\$="E5L2R4L2G10L2R4":HDRAW"B
 M60,155;C4"+F\$:HDRAW"BM95,120;U1
 0":HCIRCLE(95,105),10,13,.5,.75,
 .25:HDRAW"BM35,120;U1E7L15D7R10L
 1D1":HPAINT(30,115),3,4:HCIRCLE(60,
 155),3,6:HCIRCLE(60,155),2,4:
 HLINE(30,140)-(60,155),PSET:HLIN
 E(60,157)-(30,152),PSET
 430 HCIRCLE(100,150),3,5
 440 POKE65497,0
 450 GOTO 470
 460 PALETTE1,50:HDRAW"BM95,115;C
 1:E30D60H30":HPAINT(110,120),1,1
 :PALETTE1,0:HCIRCLE(105,115),7,3
 ,1,.25,.75:HDRAW"BM105,115;C3;U7
 D14":HPAINT(104,115),3,3:RETURN
 470 GOTO 490
 480 FORT=1 TO 250:NEXTT:RETURN
 490 GOSUB480:HDRAW"BM60,155;C4:E
 5;C0:L2R4L2":GOSUB460:HDRAW"BM60
 ,155;C0G5L2R4":B\$="U5L2R4L2D10L2
 R4":HDRAW"BM60,155;C4"+B\$:GOSUB4
 80:GOSUB460:GOSUB510:HDRAW"BM60,
 155;C0":C\$="H5L2R4L2F10L2R4L2
 H5":HDRAW"BM60,155;C9"+C\$:GOSUB4
 80:HDRAW"BM60,155;C0"+C\$
 500 D\$="L7R14L5":HDRAW"BM60,155;
 C4"+D\$:GOSUB480:GOSUB450:HDRAW"BM
 60,155;C0"+D\$:GOSUB460:GOTO 420
 510 HGET (292,55)-(316,100),1:J\$
 ="R8F8D8G8L8H8U8E8G8D8E8R2D20R4U
 2C"
 520 HPRINT(15,0),"B I K E S A F
 E T Y":HCOLORRND(15),0:HPRINT(1
 5,2),"Menu":HPRINT(15,4),"1-QUIT"
 :"HPRINT(15,5),"2-START AGAIN"
 530 GOTO 550
 540 HLINE(200,10)-(202,8),PSET,B
 F:RETURN
 550 GOSUB580:GOTO 570
 560 FORT=1 TO250:NEXTT:RETURN
 570 RETURN
 580 HDRAW"BM300,55;C5"+J\$:HPAINT
 (302,56),3,5:HPAINT(304,85),7,5:
 GOSUB560:GOSUB460:HGET(292,55)-(
 316,100),2:HPUT(292,55)-(316,100
),1:HDRAW"BM300,185;C15;R8D4L8U4
 ":HPAINT(302,186),15,15
 590 HPUT(262,55)-(286,100),2:GOS
 UB560:GOSUB460:HPUT(262,55)-(286
 ,100),1:HPUT(232,55)-(256,100),2
 :GOSUB560:HPUT(232,55)-(256,100)

BIKE SAFETY

```

820 HLINE(40,5)-(25,25),PSET:HLI
NE(50,5)-(25,40),PSET:HLINE(65,5
)-(25,60),PSET:HLINE(75,5)-(25,7
5),PSET:HLINE(90,5)-(35,80),PSET
:HLINE(100,5)-(45,80),PSET:HLINE
(125,35)-(277,35),PSET
830 HLINE(115,5)-(60,80),PSET:HL
INE(125,5)-(70,80),PSET:HLINE(12
5,25)-(85,80),PSET:HLINE(125,40)
-(95,80),PSET:HLINE(125,55)-(105
,80),PSET:HLINE(125,65)-(115,80)
,PSET
840 HPRINT(20,3),"BIKE SAFETY"
850 P=RND(63):A=RND(63):PALETTE1
,P:PALETTE2,A:HPAINT(28,7),1,3:H
PAINT(42,7),2,3:HPAINT(50,7),1,3
:HPAINT(72,7),2,3:HPAINT(82,7),1
,3:HPAINT(97,7),2,3:HPAINT(110,7
),1,3:HPAINT(122,7),2,3:HPAINT(1
25,12),1,3:HPAINT(124,75),1,3:HP
AINT(124,05),1,3
860 HPAINT(124,20),1,3:HPAINT(12
4,30),2,3:HPAINT(124,52),1,3:HPA
INT(120,78),1,3:HPAINT(120,65),2
,3
870 GOTO 890
880 FORS=1 TO10:PALETTE1,0:PALET
TE2,63:FORT=1 TO300:NEXTT:PALETT
E1,63:PALETTE2,0:FORA=1 TO300:NE
XTA:NEXTS:RETURN
890 GOSUB880
900 HPRINT(20,13),"Press c to go
on"
910 CS="L50G20F30E40":HDRAW"BM20
0,150;C3"+CS:HLINE(160,200)-(153
,150),PSET:HCIRCLE(80,130),15,3:
HCIRCLE(250,120),15,3,.5:D$="E10
L2R4L2G10L2R4":HDRAW"BM100,115;C
3"+D$:HDRAW"BM50,160;C3;D15F7":H
CIRCLE(100,140),6,3,1,.75,.25:HD
RAW"BM240,150;C3;L15F8E7"
920 HCIRCLE(300,120),5,3,1,.25,.
75:HDRAW"BM300,115;C3;D10":HPRIN
T(18,10),"A":HPRINT(32,10),"B":H
PRINT(24,8),"C":HPRINT(24,10),"D
":HPRINT(33,7),"E":HPRINT(33,6),
,"F"
930 HPRINT(24,6),"G"
940 FORY=1 TO 40:W=RND(63):D=RND
(63):PALETTE1,W:PALETTE2,O:FORT=
1 TO200:NEXTT:PALETTE2,W:PALETTE
1,O:FORT=1TO200:GOSUB950:NEXTT:N
EXTY950 GS=INKEY$:IF GS=""THEN R
ETURN
960 GOSUB2364
970 ATTR 2,4,B:K=K+1:LOCATE12,7:
PRINT"ANATOMY OF BIKE":ATTR2,4
980 IF K=2 THEN 1040
990 LOCATE 4,10:PRINT"1)BIKE FRA
ME 2) PEDALS& CHAIN":ATTR2,4:L
OCATE 4,12:PRINT"3)SEAT 4) WHEEL
1 5) WHEEL 2":ATTR2,4:LOCATE 4
,14:PRINT"6)HANDLEBARS & FORKS &
GEARS":ATTR2,4
1000 IF K=2 THEN 1040
1010 LOCATE4,15:ATTR3,2:PRINT"PR
ESS 'C' TO CONTINUE":ATTR2,4
1020 O$=INKEY$:IFO$="C"ORO$="c" T
HEN1030ELSE 1020
1030 GOSUB2364
1040 LOCATE 4,10:PRINT"YOU HAVE

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1200 FORT=1 TO 1000:NEXTT:PALETT
E8,19:PALETTE0,50:CLS0:LOCATE12,
4:PRINT"SECTION TWO";
1205 FORT=1TO2500:NEXTT
1210 PALETTE8,63:PALETTE0,0:CLS1
:WIDTH80:LOCATE12,4:PRINT"**Sect
ion Two**":PRINT"You have now su
ccessfully put your bike togethe
r. You will now learn about the d
ifferent parts of the bike and t
heir function and how to look af
ter your bike"
1220 :PRINT"In the section after
you will then learn about road
rules and at the end of the progr
amme will play an adventure type
game to emphasise all you have l
earned. A test will then be given
and a printout will be availabl
e"
1230 INPUT"PRESS 'C' TO CONTINUE
";D$:IF D$="C"OR D$="c" THEN 124
0 ELSE 1230
1240 WIDTH80:PRINT"MENU":PRINT"LECTURE ON BIKE":PRINT"1)WHEELS 2
)FRAMES 3) PEDALS & CHAINS 4) LI
GHT AND HANDLEBARS AND FORKS & B
RAKES ":PRINT"SAFETY":PRINT"5)CA
RING AFTER YOUR BIKE & SAFETY 7)
ROAD RULES 8) EXIT TO NEXT SEC
TION
1250 PRINT"9)EXIT TO PREVIOUS SE
CTION 0) GOTO MAIN MENU"
1260 AA$=INKEY$:IF AA$="" THEN 1
260
1270 IF AA$="1" THEN 1280 OR ELS
E IF AA$="2" THEN 1420 OR ELSEIF
AA$="3" THEN 1490 ORELSE IF AA$=
"4" THEN 1620 ORELSE IF AA$="5"
THEN 1710 OR ELSEIF AA$="7" THEN
1840 ORELSE IF AA$="8" THEN 194
0 ORELSE IF AA$="9" THEN 960 OR
ELSE IF AA$="0" THEN 330
1280 HSCREEN4:HCLS1:HCOLOR2,2:HP
RINT(35,3),"WHEELS":HCIRCLE(300,
100),130,4
1290 HCIRCLE(300,100),129,4:HCIR
CLE(300,100),125:HCIRCLE(300,100
),5,4:HCIRCLE(300,100),10,4
1300 HLINE(20,50)-(80,150),PSET,
B:HLINE(55,55)-(45,145),PSET,B:H
LINE(55,55)-(75,35),PSET
1310 HPRINT(10,3),"SPOKE":HPRINT
(35,15),"HUB AND BALL BEARINGS":
HPRINT(16,10),"TYRE"
1320 FORL=1 TO 3000:NEXTL
1330 FORL=1 TO 250:NEXTL:WIDTH40
1340 LOCATE20,0:PRINT"The WHEEL"
:PRINT"The wheel is an essential
part of a bicycle. It is the thi
ng which allows the bike to trav
el and which supports the bike. T
he wheel also contains the tyre
, ballbearings ,spokes and hub as
well as the rim."
1350 PRINT"    ";:PRINT"The rim i
s a circular piece of metal whic
h the spokes are attached to. The
rims main purpose is to support
the tyre and attach it to the m
ain frame of the bike. The spokes

```

job is to act rather like a shock absorber and the ballbearing
1360 PRINT"ensure that the wheel moves smoothly": PORT=1 TO 4000;
NEXTT: INPUT"PRESS C TO CONTINUE"
;AAS: IF AAS="C" OR AAS="c" THEN
1370 ELSE 1340

1370 CLS:PRINT:PRINT"You should always check your bike before you ride it and make sure everything is all right.Your tyres should be at a fairly high pressure to make sure that the rim is not damaged, and the rims should be polished when you wash your bike
1380 PRINT"You should also check that the nuts attaching the hub to the forks is tight and secure."

1390 INPUT"DO YOU WANT TO SEE THAT AGAIN Y/N";LS: IF LS="Y" THEN
1280 ELSE IF LS="N" THEN 1240
1400 GOTO 1400

1410 GOTO1240

1420 SOUND54, 1:HSCREEN2:ATTR1,3:
HDRAW"BM100,50;C4G50F50U100":HLI
NE(100,50)-(170,85),PSET:HLINE-(
100,150),PSET:HCOLOR2,6:HPRINT(5
,3),"THE FRAME"
1430 HDRAW"BM95,60;C4G40F40U80":
HLINE(100,55)-(165,85),PSET:HLIN
E-(100,145),PSET
1440 HPRINT(5,5),"PRESS 'C' TO GO ON":A\$=INKEY\$: IF A\$="C" THEN 1
450 ELSE 1440

1450 WIDTH40:CLS2:ATTR4,3:LOCATE
12,4:PRINT"THE FRAME";:ATTR3,2:P
RINT"The frame is the main of the bike.Attached to it are all the things which make up the bike. It too should be regularly cleaned and looked after. It is designed to take all the stress"

1460 PRINT" ";;PRINT"Placed upon it and is constructed of two triangles which suit this purpose suitably."

1470 INPUT"DO YOU WANT TO SEE THAT AGAIN";AAS: IF AAS="Y" THEN 14
20 OR IF AAS="N" THEN 1480 ELSE
1240

1480 GOTO 1240

1490 HSCREEN4: HCLS1:HCOLOR0,1:H
PRINT(20,3),"PEDALS AND CHAIN"
1500 HLINE(100,50)-(140,60),PSET
,DF:HLINE(150,150)-(190,160),PSE
T,BF:HLINE(170,150)-(120,50),PSE
T:HLINE(165,150)-(115,50),PSET

1510 HCIRCLE(145,105),20,4:HPAINT
(145,105),3,4:HPAINT(149,105),3
,4:HPAINT(140,105),3,4

1520 HCIRCLE(500,100),20,4,1,.75
,.25:HCIRCLE(350,100),30,4,1,.25
.75:HLINE(350,85)-(500,90),PSET
:HLINE(500,110)-(350,115),PSET

1530 HPRINT(2,78),"PRESS'C' TO CONTINUE":A\$=INKEY\$: IF A\$=""THEN
1530 ELSE IF A\$="C" THEN 1540 ELSE 1530

1540 WIDTH40:CLS6:ATTR4,3:PRINT"
";:PRINT"PEDALS AND CHAINS"

1550 ATTR4,3:PRINT"Pedals and chains are an important part of the bike.They essentially drive the bike and can be considered as the motor driving the vehicle(bike)"

1560 PRINT"Screws holding the pedals onto the arm must always be checked and worn out pedals must be replaced.The chain is used to turn the wheel around and it is important that it is checked for faults and taken apart for oiling"

1570 PRINT"For night travel it's a good idea to get pedals with reflectors* *":INPUT"PRESS C TO CONTINUE":KKS: IF KKS="C" THEN GO TO 1580 ELSE 1490

1580 CLS:PRINT" ";;PRINT"THE SEAT":PRINT"The seat is specially designed on most bikes to support your body comfortably and practically.The gears are a complicated set of cogs of different sizes which makes travelling hard or easy.Your brakes though are" 1590 PRINT" perhaps one of the most vital objects on the bike these too are situated on the handlebars and by squeezing one of the wires it forces the brake pads on the rim and slows the bike down.Brake pads should be regularly checked and replaced"

1600 INPUT"DO YOU WANT TO SEE THAT AGAIN Y/N";LS: IF LS="Y" THEN
1490 ELSE IF LS="N" THEN 1610

1610 GOTO 1240
1620 HSCREEN4:HCLS2:HCIRCLE(100,
50),30,0,1,.25,.75:HCIRCLE(100,5
0),40,0,1,.25,.75:HDRAW"BM100,50
;C0;BU15U5D5BD30D100L10U95":HPAI
NT(98,135),0,0:HPAINT(96,66),0,0
1630 HCIRCLE(400,90),40,3,1,.25
.75:HDRAW"BM400,90;C9;U20D40":HP
AINT(399,80),3,3

1640 HCOLOR4,4:HPRINT(2,0),"HANDLEBARS & HEADLIGHTS & FORKS":H
PRINT(2,20),"FORKS":HPRINT(13,10),
"HANDLEBARS":HPRINT(32,15),"LIGH
T"

1650 FORT=1 TO 4000:NEXTT:WIDTH4
0:PRINT:PRINT:PRINT" ";;ATTR3,2
:PRINT"HEADLIGHTS AND HANDLEBARS";

1660 PRINT:PRINT:PRINT" ";;PRINT
"Headlights and handlebars are two important parts of the bike. The handlebars steer the bike and should be regularly checked for alignment.Proper stoppers should be fitted where the handgrips should be"

1670 PRINT" ";;PRINT"As well as a possible headlight the handlebars may contain a bell or gear levers.Headlights are used for light at night and also should be checked often.Globes are easily broken and wires from a battery

or a generator can be become";
1680 PRINT"loose etc":PRINT" ";;
:PRINT"The forks attach the handle bars to the wheel for steering and frame ,they are often made of chrome

1690 INPUT"WOULD YOU LIKE TO SEE THAT AGAIN";AAS: IF AAS="Y" THE
N 1620 ELSE IF AAS="N" THEN 1240
1700 GOTO 1690

1710 WIDTH40:CLS0:PALETTE12,63:P
ALETTE13,0:PRINT"CARING AFTER YOUR BIKE"

1720 PRINT" ";;PRINT"It is essential that you look after your bike if you wish to keep it in good order.There are many things that you can do to look after your bike-

1730 PRINT" ";;PRINT"Many things must be constantly checked and replaced if needed.";PRINT" ";;PRINT"These include:tyres which must be checked for wear and punctures--handlebars must be in alignment& at the right height a

s must the seat --gears & chain
1740 PRINT"be oiled and cleaned-- brakes be checked for wear & adjusted -- pedals tightened ,and generally have the bike clean and in a good state.A checklist is on the next page"

1750 INPUT"C TO CONTINUE";LL\$:
IF LL\$="C" THEN 1760 ELSE 1750

1760 CLS2:PRINT"C H E C K L I S
T":PRINT" ";;PRINT"1) ARE THE H
ANDLEBARS STRAIGHT AND AT THE RI
GHT HEIGHT?":PRINT"2) IS THE SEAT

AT A GOOD HEIGHT (FEET JUST TOU
CHING GROUND)":PRINT"3) ARE BRA
ES IN ORDER & NOT WORN":PRINT"4)
ARE THE GEARS-CHAIN OILED & WO

1770 PRINT"5) ARE THE TYRES PUMP
ED UP/WITH A GOOD TREAD":PRINT"6
)CHECK TO SEE THAT ALL SCREWS AR
E TIGHT":PRINT"7) HAVE YOU GOT YOU
R HELMET":PRINT"8)(FOR NIGHT) HA
VE YOU A LIGHT WORKING FRONT & B
ACK":PRINT"9) ARE YOU WEARING BRI
GHT CLOTHES"

1780 PRINT"10) REMEMBER TO TAKE CARE AT ALL TIMES & NOT TO DO ANYTHING SILLY.OBSERVE THE ROAD RULES*AT ALL TIME!*

1790 INPUT"WOULD YOU LIKE A PRINT
OUT OF THIS";LS: IF LS="Y" THE
N 1800 ELSE 1810

1800 REM SPACE FOR PRINTER ROUTINE

1810 CLS:PRINT" ";;PRINT"Remember many hundreds of children are killed or injured every year on the roads.":PRINT" ";;PRINT"Always wash your bike and look after it & take to a bike shop at least twice a year to clean ball bearings etc"

1820 INPUT"WOULD YOU LIKE TO SEE THAT AGAIN";LS: IF LS="Y" THEN
1710

1830 GOTO 1240
 1840 CLS5:ATTR4,3,B:PRINT" ROAD
 *** RULES ":"ATTR3,2:PRINT" It is
 essential that you observe & know
 the road rules. Road rules are
 necessary for safety & order":PR
 INT"major road rules are---":PRI
 NT"1) keep to the left 2)observe
 the speed limit 3)always ride
 1850 PRINT" single file 4) dont
 weave between cars or blindly pi
 de behind a car where you're not
 seen 5) dont overtake 6) dont ri
 de on wrong side of roads 7)sign
 al when turning 8)dont ride on f
 ootpaths unless on a dangerous t
 borroughfare 9)wear a helmet";
 1860 PRINT" 11)dont ride at nigh
 t without a light front & back a
 nd relectors 12)wear brightly c
 oloured clothes 13)dont do anyth
 ing stupid & be careful"
 1870 INPUT"PRESS C TO CONTINUE";
 LL\$:IF LL\$="C" THEN 1880 ELSE 18
 70
 1880 HSCREEN4:HCOLOR1,3:HPRINT(0
 .0)," R O A D R U L E S "
 1890 HPRINT(0,1),"IF AT A 'T' IN
 TERSCTION GIVE WAY TO THE LEFT&
 IIGHT BEFORE TURNONG":HPRINT(0,2)
 ."IF A VEHICLE IS TURNING INTO Y
 OUR STREET GIVE WAY TO IT FIRST
 THE SAME RULE":HPRINT(0,3),"APPL
 IES AT A CROSS INTERSECTION REME
 MBER TO OBEY STOP GIVEWAY SIGN
 1900 HPRINT(0,4),"AND TRAFFIC LI
 GHTS ALL THE RULES FOR A NORMAL
 CAR APPLY TO YOU":HPRINT(0,5),"I
 F CROSQING A ZEBRA CROSSING GET
 OFF YOUR BIKE & WHEEL IT ACROSS"
 1910 HPRINT(0,7),"press any key"
 1920 AA\$=INKEY\$:IF AA\$=""THEN192
 0 ELSE 1930
 1930 WIDTH40:INPUT"WOULD YOU LIK
 E TO SEE THAT AGAIN";AA\$:IF AA\$=
 "Y" THEN 1840 ELSE 1240
 1940 ESCREEN2:PALETTE0,25:PALETT
 E1,5:HCOLOR1,0:HPRINT(5,5),"DANG
 ERous":HPRINT(5,10),"RIDING !":H
 PRINT(5,18),"AN ADVENTURE BY N F
 ULLER"
 1950 HCOLOR1,0:HDRAW"BM200,50:C3
 L30G30D30F30R30E30U30H30":HPAINT
 (200,50),3,3:HCOLOR1,0:HPRINT(21
 ,11)."STOP":FORT=1 TO 10:PALETTE
 1,63:FORS=1TO50:NEXTT:PALETTE1,0
 :NEXTT
 1960 HPRINT(20,0),"PRESS ANY KEY
 "
 1970 AX\$=INKEY\$:IF AX\$=""THEN 19
 70 ELSE 1980
 1980 HCLS:HDRAW"BM0,0:C2F160E160
 ":"HPRINT(15,0),"**SUMMONS**":PAL
 ETTE2,9:HCOLOR2,4:HPRINT(0,2),"T
 ASK:You are in your garage. You m
 ust":HPRINT(0,3),"ride to the ot
 her side of town with":HPRINT(0,
 4),"a secret letter but beware t
 here are "
 1990 HPRINT(0,5),"many dangers t
 o overcome & hazards":HPRINT(0,7

),"PRESS ANY KEY"
 2000 AX\$=INKEY\$:IF AX\$="" THEN20
 00ELSE 2010
 2010 HSCREEN2:HCLS0:HDRAW"BM0,10
 0,C2;R319H40U60D60L150U60D60G40U
 100D100":HLINE(130,60)-(220,1),P
 SET:HLINE(250,60)-(260,1),PSET:H
 PAINT(0,0),7,2:PALETTE6,19:HPAIN
 T(200,2),6,2:HPAINT(120,5),3,2:H
 PAINT(319,5),3,2:HPAINT(120,90),
 5,2
 2020 HCIRCLE(160,15),15,3,2:HPAI
 NT(160,15),3,3:HCIRCLE(190,20),4
 ,3,2:HPAINT(190,20),3,3
 2030 HPRINT(0,13),"YOU'RE ABOUT
 TO RIDE"
 2040 HPRINT(0,14),"WHAT HAVE YOU
 FORGOTTEN?":HPRINT(0,15),"A)PAI
 NT B)KNIFE C)HELMET"
 2050 AS\$=INKEY\$:IF AS\$=""THEN205
 0 ELSE2060
 2060 IF AS\$="C" THEN 2080 ELSE 2
 070
 2070 SOUND1,5:GOTO 2050
 2080 GOSUB2514:GOSUB2814
 2090 HCOLOR4,6:HPRINT(0,13),"WIL
 L YOU (NO)OUNT OR (C)HECK"
 2100 AS\$=INKEY\$:IF AS\$=""THEN2100E
 LSE2110
 2110 IF AS\$="C"THEN2120ELSE2130
 2120 HPRINT(0,14)."YOU CHECK YOU
 R BIKE & FIND":GOSUB2854:GOTO 21
 90
 2130 T=RND(3):HPRINT(0,15),"YOU
 ARE RIDING ALONG AN AVENUE":HPRI
 NT(0,16),"YOU MUST STOP SUDDENLY
 TYPE BRAKE"
 2140 AS\$=INKEY\$:IF AS\$=""THEN2140
 2150 IF AS\$="B"THEN2170 ELSE 2140
 2160 IFT<2 THEN2170 ELSE2180
 2170 HPRINT(0,17)."YOU FORGOT TO
 CHECK YOUR BIKE YOUR":HPRINT(0,
 18),"BRAKES ARE FAULTY YOU CRASH
 ":GOSUB90:CR=CR+1:GOTO 2190
 2179 SOUND1,23
 2180 HPRINT(0,17)."YOU NEARLY CR
 ASHER CHECK YOUR BIKE":HPRINT(0,
 18),"BEFORE you ride it!":C=C+1
 2190 HPAINT(1,150),1,2:HPRINT(0,
 13),"Do you ride on left or righ
 t?"
 2200 AS\$=INKEY\$:IF AS\$="" THEN 220
 0
 2210 IF AS\$="L" THEN 2230 ELSE IF
 AS\$="R"THEN 2220
 2220 HPRINT(0,16)."You were hit
 by a car lucky you had":HPRINT(0
 ,17),"a helmet":FORT=1 TO 10:FLA
 Y"TZ5501AAAAAAAIAAAAIAAV":
 NEXTP:PALETTERGB:GOTO2010
 2230 HPRINT(0,16),"JUST ASWELL!*
 *ANY KEY":AS\$=INKEY\$:IF AS\$=""THEN
 2230
 2240 HPAINT(1,150),0,2:HPRINT(0,
 13),"PICK THE RIGHT ANSWER. YOU R
 IDE ":HPRINT(0,14),"A)ON THE FO
 OTPATH B)ON THE ROAD":HPRINT(0,1
 5),"C)DOUBLE FILE D)ON THE RIGHT
 "
 2250 AQ\$=INKEY\$:IF AQ\$=""THEN225
 0

2260 IF AQ\$="A" OR AQ\$="CQ"OR AQ
 \$="D" THEN GOSUB3164 ELSE IF AQ\$
 ="B" THEN2261
 2261 HPAINT(1,150),1,2
 2262 HPAINT(100,150),0,2:HPRINT(0
 ,13),"YOU COME TO AN INTERSECTI
 ON":HPAINT(200,5),5,2:HPRINT(0,1
 5),"PRESS ANY KEY"
 2263 AS\$=INKEY\$:IF AS\$=""THEN2263
 2264 WIDTH40:ATTR4,2:CLS:PRINT"
 YOU MUST PUT THE LETTERS IN THE
 CORRECT ORDER IN ORDER TO STOP"
 2265 PRINT"A)TURN B) GIVEAWAY C)S
 IGNAL D)SLOWDOWN":INPUT"1=";JJ\$:
 INPUT"2=";JHS:INPUT"3=";JGS:INPU
 T"4=";GD\$:IF JJ\$="D" AND JHS="C"
 AND JGS="B" AND GD\$="A" THEN 22
 66 ELSE GOTO 2264
 2266 CLS:HSCREEN2:GOSUB2514:FORE
 T=1 TO 3000:NEXTT
 2267 HSCREEN0:PALETTERGB
 2268 WIDTH32:PMODE 1,1:PCLS3:SCR
 EEN1,1:DRAW"BM130,100;C2U40H40L4
 0G40D40F40R40E40U40":PAINT(110,9
 0),1,2
 2269 FORT=1 TO 2500:NEXTT:WIDTH4
 0:ATTR3,2:CLS:PRINT"AT THE END O
 F THE ROAD YOU SAW THAT SIGN WHA
 T DO YOU DO?"
 2270 INPUT"A)GO STRAIGHT AHEAD B
)GIVEAWAY C)STOP D)WAIT FOR TRAIN
 TO GO PAST";GG\$:IF GG\$="C" THEN
 2271 ELSE SOUND1,10 :IF GG\$="A"
 THEN 3164 ELSE GOTO 2270
 2271 FORT=1 TO 5:PRINT" C O R R
 E C T !!":NEXTT:FORE=1 TO 1000:N
 EXT
 2272 CLS:PRINT"WILL YOU TURN LEF
 T OR RIGHT";FF\$:CLS:PRINT" TWO CO
 MMODORE USERS ON SKATEBOARDS APP
 ROACH YOU":INPUT" a)ride on foot
 path b)increase speed over limit
 c)take the short cut d)nothing";
 DC\$
 2273 IF DC\$="D" OR DC\$="C" THEN
 2275 ELSE 2274
 2274 PRINT"UNFORTUNATELY YOU CRA
 SHED":GOSUB8!:INPUT"YOU HAVE TO
 MAKE REPAIRS ON YOUR BIKE TYPE
 FIX":HH\$:IF HH\$="FIX" THEN 2275
 ELSE 2274
 2275 HSCREEN2:PALETTE0,52:HCLS0:
 PALETTE4,32:PALETTE3,7:HCOLOR4,1
 :HLINE(40,20)-(100,160),PSET,BF:
 HDRAW"BM40,20;C4E10R60G10E10D140
 G10":HPAINT(60,15),3,4:HPAINT(10
 5,50),3,4
 2276 PALETTE5,19:PALETTE2,36:HC
 RCL(70,40),20,2:HPAINT(70,40),2
 ,2:HCIRCLE(70,85),20,2:HPAINT(70
 ,85),7,2:HCIRCLE(70,130),20,2:H
 PAINT(70,125),5,2
 2277 HPRINT(0,0),"press any key"
 :AS\$=INKEY\$:IF AS\$=""THEN2277
 2278 WIDTH40:ATTR4,2:PRINT"YOU'VE
 COME TO A TRAFFIC LIGHT IF THE
 LIGHT IS RED YOU SHOULD A)STOP
 B)CONTINUE":INPUT"";JJ\$:IF JJ\$="B"
 THEN GOSUB3164 ELSE IF JJ\$="A"
 THEN 2279
 2279 AS=RND(70):PRINT"YOUR CURRE

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    NT SPEED IS ";AS "KMS": IF AS>60
    THEN 2280 IF I<60 THEN 2281
    2280 INPUT"YOU ARE GOING TOO FAST
    TYPE BRAKE TO SLOW DOWN";JJ$: IF
    JJ$="BRAKE" THEN 2290 IF ELSE TH
    EN 2280
    2281 CLS: PRINT"YOU ARE ONLY A FE
    W HUNDRED METRES AWAY FROM THE F
    INISH! BUT YOU STILL HAVE TO PASS
    A FEW MORE THINGS YET": INPUT"DO
    YOU TURN LEFT OR RIGHT";FF$: IF
    FF$="R" THEN 2282 ELSE 2285
    2282 WIDTH32: MODE1,1:SCREEN1,1:
    PCLS2: CIRCLE(128,96),50,0:PAINT(
    128,96),0,0:PALETTE6,50,:COLOR7,
    6:LINE(100,90)-(155,105),PSET,BF
    2283 FORT=1 TO 3000: NEXTT: WIDTH40:
    INPUT"DO YOU GO STRAIGHT AHEAD (
    A) OR GO THE OTHER WAY (B)";GG$:
    IF GG$="A" THEN GOSUB****ELSE GO
    TO 2285
    2285 WIDTH32: MODE1,1:SCREEN1,1:
    COLOR2,7:PCLS: PALETTE6,38:DRAW'B
    M50,50:C2R150G75H75F75D50":PAINT
    (0,0),5,2
    2286 FORT=1 TO 3000: NEXTT: WIDTH40:
    CLS: INPUT"This SIGN IS A )STOP
    SIGN B)GIVEWAY SIGN C)CROSSING S
    IGN D)NO ENTRY SIGN E)NO PARKING
    SIGN";JJ$: IF JJ$="B" THEN 2288
    IF ELSE THEN 2287
    2287 SOUND1,10:PRINT"WRONG PLEAS
    E TRY AGAIN":GOTO 2285
    2288 HSCREEN2: PALETTE0,0:HCLSO:H
    DRAW"BMO,100,C4E20R10D5E4R30F20E
    10F4R4F4E10R100E10F10E10F20E10F2
    0E10R50":FOREE=1 TO 200:A=RND(32
    0):B=RND(90):HSET(A,B,4):NEXTEE:
    HLINE(0,150)-(320,150),PSET:HPAI
    NT(0,110),2,4:HCIRCLE(20,20),15,
    6:HPAINT(20,20),6,6
    2289 HPRINT(0,17),"Press any key
    ";AS=INKEY$: IF AS="" THEN 2289
    2290 WIDTH40:PRINT"IT'S LATE AT N
    IGHIT WHAT DO YOU NEED OF THE POL
    LOVING": INPUT"A)REFLECTOR B)LIGH
    T (FRONT&BACK) C)BRIGHT CLOTHING
    D)ALL OF THE ABOVE";HH$: IF HH$=
    "D" THEN 2292 IF ELSE 2291
    2291 SOUND1,10:PRINT"WRONG TRY A
    GAIN":GOTO 2288
    2292 PRINT"YOU ARE RIDING ALONG
    A ROAD": INPUT"TURN RIGHT OR LEFT
    ";ZZ$: INPUT"YOU ARE RIDING ALONG
    A ROAD TURN RIGHT OR LEFT";ZX$:
    PRINT"YOU'RE JUST ABOUT THERE!""
    : INPUT"RIGHT OR LEFT";ZZ$: IF ZZ$=
    "R" THEN 2293 ELSE 2294
    2293 PRINT"YOU TOOK A WRONG TURN
    ";GOTO 2292
    2294 HSCREEN2: PALETTE0,0:HCLSO:P
    ALETTE1,50:FORSS=20 TO 300 STEP20:H
    CIRCLE(SS,10),4,1:HPAINT(SS,10),
    1,1:NEXTSS:FORDD=20 TO 300 STEP20:H
    CIRCLE(DD,180),4,1:HPAINT(DD,180
    ),1,1:NEXTDD:FORE=10 TO 180 STEP20:
    HCIRCLE(20,E),4,1:HPAINT(20,E),1
    ,1:NEXTE
    2295 FORCI=10 TO 180 STEP20:HCIRCLE
    (300,CI),4,1:HPAINT(300,CI),1,1:
    NEXTCI:FORT=1 TO 10:PALETTE1,0:FOR

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    E=1 TO 100:NEXTE:PALETTE3,50:FORS=
    1 TO 100:NEXTS:NEXTI:PALETTE3,50:F
    ORCI=30 TO 270 STEP15:HCIRCLE(CI,20
    ),4,3:HPAINT(CI,20),3,3:NEXTCI:F
    ORDE=30 TO 270 STEP15
    2296 HCIRCLE(DE,170),4,3:HPAINT(
    DE,170),3,3:NEXTDR:FORUU=20 TO 170
    STEP15:HCIRCLE(30,UU),4,3:HPAINT
    (30,UU),3,3:NEXTUU:FORVV=20 TO 170
    STEP15:HCIRCLE(290,VV),4,3:HPAINT
    (290,VV),3,3:NEXTVV:PALETTE4,15
    :HCOLOR4,5:HPRINT(10,5),"Congrat
    ulations":PALETTE5,33
    2297 HCOLOR5,4:HPRINT(10,7),"You
    've finished the":HPRINT(13,9),"adventure":
    FORT=1 TO 30:PALETTE1,0
    :PALETTE3,50:FORY=1 TO 50:NEXTY:PA
    LETTE1,50:PALETTE3,0:FORY=1 TO 50:
    NEXTY:NEXTR:
    2298 FORT=1 TO 4000:NEXIT:WIDTH40:
    ATTR3,2,U,B:PRINT"TEST":ATTR2,1
    2299 INPUT"QUESTION1";AB$: INPUT"
    QUESTION2";AC$: INPUT"C3";AD$: INPUT
    "Q4";AE$: INPUT"Q5";AF$: INPUT"Q
    6";AG$: INPUT"Q7";AQ$: INPUT"Q8";S
    S$: INPUT"Q9";FU$: INPUT"Q10";RT$:
    2300 'ROOM FOR QUESTIONS
    2301 'ROOM FOR QUESTIONS
    2305 IF AB$="X" THEN GOSUB3370:IFA
    C$="X" THEN GOSUB3370:IF AD$="X" THE
    N GOSUB3370:IF AE$="X" THEN GOSUB337
    0:IF AF$="X" THEN GOSUB3370:IF AG$="X
    " THEN GOSUB3370:IF AQ$="X" THEN GOSU
    B3370:IF SS$="X" THEN GOSUB3370:IF
    FU$="X" THEN GOSUB3370:IF RT$="X" TH
    EN GOSUB3370
    2310 PR=XX/10*100:CLS:PRINT"CONGR
    RATULATIONS YOU GOT ";PR "%"
    2330 PRINT"PRESS ANY KEY"
    2331 AS=INKEY$: IF AS="" THEN 2331
    2360 GOTO 340
    2361 GOTO 2361
    2364 WIDTH40:PALETTERGB:CLS7:ATT
    R2,4:FORX=0 TO 39 STEP 2:LOCATEX
    +1,0:LOCATEX,1:LOCATEX,23:LOCATE
    X+1,22:PRINT"";NEXTX:FORU=3 TO
    21 STEP2:LOCATE0,U:LOCATE1,U-1:L
    OCATE39,U-1:LOCATE38,U:PRINT"";:
    NEXTU:RETURN
    2414 GOSUB2364:PQ=PQ+1:LOCATE4,1
    0:PRINT"1)BIKE FRAME 2)PEDALS &
    CHAIN 3)SEAT";:ATTR2,4:LOCATE12,
    7:PRINT"WORD LIST";:ATTR2,4:LOCA
    TE4,11:PRINT"4)WHEEL 1 5)WHEEL 2
    6)HANDLEBARS & ";:ATTR2,4:LOCAT
    E13,1:PRINT"5)SEATBELT";:ATTR2,4:LOC
    E14,1:PRINT"6)WHEEL 3";:ATTR2,4:LOC
    E15,1:PRINT"7)WHEEL 4";:ATTR2,4:LOC
    E16,1:PRINT"8)WHEEL 5";:ATTR2,4:LOC
    E17,1:PRINT"9)WHEEL 6";:ATTR2,4:LOC
    E18,1:PRINT"10)WHEEL 7";:ATTR2,4:LOC
    E19,1:PRINT"11)WHEEL 8";:ATTR2,4:LOC
    E20,1:PRINT"12)WHEEL 9";:ATTR2,4:LOC
    E21,1:PRINT"13)WHEEL 10";:ATTR2,4:LOC
    E22,1:PRINT"14)WHEEL 11";:ATTR2,4:LOC
    E23,1:PRINT"15)WHEEL 12";:ATTR2,4:LOC
    E24,1:PRINT"16)WHEEL 13";:ATTR2,4:LOC
    E25,1:PRINT"17)WHEEL 14";:ATTR2,4:LOC
    E26,1:PRINT"18)WHEEL 15";:ATTR2,4:LOC
    E27,1:PRINT"19)WHEEL 16";:ATTR2,4:LOC
    E28,1:PRINT"20)WHEEL 17";:ATTR2,4:LOC
    E29,1:PRINT"21)WHEEL 18";:ATTR2,4:LOC
    E30,1:PRINT"22)WHEEL 19";:ATTR2,4:LOC
    E31,1:PRINT"23)WHEEL 20";:ATTR2,4:LOC
    E32,1:PRINT"24)WHEEL 21";:ATTR2,4:LOC
    E33,1:PRINT"25)WHEEL 22";:ATTR2,4:LOC
    E34,1:PRINT"26)WHEEL 23";:ATTR2,4:LOC
    E35,1:PRINT"27)WHEEL 24";:ATTR2,4:LOC
    E36,1:PRINT"28)WHEEL 25";:ATTR2,4:LOC
    E37,1:PRINT"29)WHEEL 26";:ATTR2,4:LOC
    E38,1:PRINT"30)WHEEL 27";:ATTR2,4:LOC
    E39,1:PRINT"31)WHEEL 28";:ATTR2,4:LOC
    E40,1:PRINT"32)WHEEL 29";:ATTR2,4:LOC
    E41,1:PRINT"33)WHEEL 30";:ATTR2,4:LOC
    E42,1:PRINT"34)WHEEL 31";:ATTR2,4:LOC
    E43,1:PRINT"35)WHEEL 32";:ATTR2,4:LOC
    E44,1:PRINT"36)WHEEL 33";:ATTR2,4:LOC
    E45,1:PRINT"37)WHEEL 34";:ATTR2,4:LOC
    E46,1:PRINT"38)WHEEL 35";:ATTR2,4:LOC
    E47,1:PRINT"39)WHEEL 36";:ATTR2,4:LOC
    E48,1:PRINT"40)WHEEL 37";:ATTR2,4:LOC
    E49,1:PRINT"41)WHEEL 38";:ATTR2,4:LOC
    E50,1:PRINT"42)WHEEL 39";:ATTR2,4:LOC
    E51,1:PRINT"43)WHEEL 40";:ATTR2,4:LOC
    E52,1:PRINT"44)WHEEL 41";:ATTR2,4:LOC
    E53,1:PRINT"45)WHEEL 42";:ATTR2,4:LOC
    E54,1:PRINT"46)WHEEL 43";:ATTR2,4:LOC
    E55,1:PRINT"47)WHEEL 44";:ATTR2,4:LOC
    E56,1:PRINT"48)WHEEL 45";:ATTR2,4:LOC
    E57,1:PRINT"49)WHEEL 46";:ATTR2,4:LOC
    E58,1:PRINT"50)WHEEL 47";:ATTR2,4:LOC
    E59,1:PRINT"51)WHEEL 48";:ATTR2,4:LOC
    E60,1:PRINT"52)WHEEL 49";:ATTR2,4:LOC
    E61,1:PRINT"53)WHEEL 50";:ATTR2,4:LOC
    E62,1:PRINT"54)WHEEL 51";:ATTR2,4:LOC
    E63,1:PRINT"55)WHEEL 52";:ATTR2,4:LOC
    E64,1:PRINT"56)WHEEL 53";:ATTR2,4:LOC
    E65,1:PRINT"57)WHEEL 54";:ATTR2,4:LOC
    E66,1:PRINT"58)WHEEL 55";:ATTR2,4:LOC
    E67,1:PRINT"59)WHEEL 56";:ATTR2,4:LOC
    E68,1:PRINT"60)WHEEL 57";:ATTR2,4:LOC
    E69,1:PRINT"61)WHEEL 58";:ATTR2,4:LOC
    E70,1:PRINT"62)WHEEL 59";:ATTR2,4:LOC
    E71,1:PRINT"63)WHEEL 60";:ATTR2,4:LOC
    E72,1:PRINT"64)WHEEL 61";:ATTR2,4:LOC
    E73,1:PRINT"65)WHEEL 62";:ATTR2,4:LOC
    E74,1:PRINT"66)WHEEL 63";:ATTR2,4:LOC
    E75,1:PRINT"67)WHEEL 64";:ATTR2,4:LOC
    E76,1:PRINT"68)WHEEL 65";:ATTR2,4:LOC
    E77,1:PRINT"69)WHEEL 66";:ATTR2,4:LOC
    E78,1:PRINT"70)WHEEL 67";:ATTR2,4:LOC
    E79,1:PRINT"71)WHEEL 68";:ATTR2,4:LOC
    E80,1:PRINT"72)WHEEL 69";:ATTR2,4:LOC
    E81,1:PRINT"73)WHEEL 70";:ATTR2,4:LOC
    E82,1:PRINT"74)WHEEL 71";:ATTR2,4:LOC
    E83,1:PRINT"75)WHEEL 72";:ATTR2,4:LOC
    E84,1:PRINT"76)WHEEL 73";:ATTR2,4:LOC
    E85,1:PRINT"77)WHEEL 74";:ATTR2,4:LOC
    E86,1:PRINT"78)WHEEL 75";:ATTR2,4:LOC
    E87,1:PRINT"79)WHEEL 76";:ATTR2,4:LOC
    E88,1:PRINT"80)WHEEL 77";:ATTR2,4:LOC
    E89,1:PRINT"81)WHEEL 78";:ATTR2,4:LOC
    E90,1:PRINT"82)WHEEL 79";:ATTR2,4:LOC
    E91,1:PRINT"83)WHEEL 80";:ATTR2,4:LOC
    E92,1:PRINT"84)WHEEL 81";:ATTR2,4:LOC
    E93,1:PRINT"85)WHEEL 82";:ATTR2,4:LOC
    E94,1:PRINT"86)WHEEL 83";:ATTR2,4:LOC
    E95,1:PRINT"87)WHEEL 84";:ATTR2,4:LOC
    E96,1:PRINT"88)WHEEL 85";:ATTR2,4:LOC
    E97,1:PRINT"89)WHEEL 86";:ATTR2,4:LOC
    E98,1:PRINT"90)WHEEL 87";:ATTR2,4:LOC
    E99,1:PRINT"91)WHEEL 88";:ATTR2,4:LOC
    E100,1:PRINT"92)WHEEL 89";:ATTR2,4:LOC
    E101,1:PRINT"93)WHEEL 90";:ATTR2,4:LOC
    E102,1:PRINT"94)WHEEL 91";:ATTR2,4:LOC
    E103,1:PRINT"95)WHEEL 92";:ATTR2,4:LOC
    E104,1:PRINT"96)WHEEL 93";:ATTR2,4:LOC
    E105,1:PRINT"97)WHEEL 94";:ATTR2,4:LOC
    E106,1:PRINT"98)WHEEL 95";:ATTR2,4:LOC
    E107,1:PRINT"99)WHEEL 96";:ATTR2,4:LOC
    E108,1:PRINT"100)WHEEL 97";:ATTR2,4:LOC
    E109,1:PRINT"110)WHEEL 98";:ATTR2,4:LOC
    E110,1:PRINT"120)WHEEL 99";:ATTR2,4:LOC
    E111,1:PRINT"130)WHEEL 100";:ATTR2,4:LOC
    E112,1:PRINT"140)WHEEL 110";:ATTR2,4:LOC
    E113,1:PRINT"150)WHEEL 120";:ATTR2,4:LOC
    E114,1:PRINT"160)WHEEL 130";:ATTR2,4:LOC
    E115,1:PRINT"170)WHEEL 140";:ATTR2,4:LOC
    E116,1:PRINT"180)WHEEL 150";:ATTR2,4:LOC
    E117,1:PRINT"190)WHEEL 160";:ATTR2,4:LOC
    E118,1:PRINT"200)WHEEL 170";:ATTR2,4:LOC
    E119,1:PRINT"210)WHEEL 180";:ATTR2,4:LOC
    E120,1:PRINT"220)WHEEL 190";:ATTR2,4:LOC
    E121,1:PRINT"230)WHEEL 200";:ATTR2,4:LOC
    E122,1:PRINT"240)WHEEL 210";:ATTR2,4:LOC
    E123,1:PRINT"250)WHEEL 220";:ATTR2,4:LOC
    E124,1:PRINT"260)WHEEL 230";:ATTR2,4:LOC
    E125,1:PRINT"270)WHEEL 240";:ATTR2,4:LOC
    E126,1:PRINT"280)WHEEL 250";:ATTR2,4:LOC
    E127,1:PRINT"290)WHEEL 260";:ATTR2,4:LOC
    E128,1:PRINT"300)WHEEL 270";:ATTR2,4:LOC
    E129,1:PRINT"310)WHEEL 280";:ATTR2,4:LOC
    E130,1:PRINT"320)WHEEL 290";:ATTR2,4:LOC
    E131,1:PRINT"330)WHEEL 300";:ATTR2,4:LOC
    E132,1:PRINT"340)WHEEL 310";:ATTR2,4:LOC
    E133,1:PRINT"350)WHEEL 320";:ATTR2,4:LOC
    E134,1:PRINT"360)WHEEL 330";:ATTR2,4:LOC
    E135,1:PRINT"370)WHEEL 340";:ATTR2,4:LOC
    E136,1:PRINT"380)WHEEL 350";:ATTR2,4:LOC
    E137,1:PRINT"390)WHEEL 360";:ATTR2,4:LOC
    E138,1:PRINT"400)WHEEL 370";:ATTR2,4:LOC
    E139,1:PRINT"410)WHEEL 380";:ATTR2,4:LOC
    E140,1:PRINT"420)WHEEL 390";:ATTR2,4:LOC
    E141,1:PRINT"430)WHEEL 400";:ATTR2,4:LOC
    E142,1:PRINT"440)WHEEL 410";:ATTR2,4:LOC
    E143,1:PRINT"450)WHEEL 420";:ATTR2,4:LOC
    E144,1:PRINT"460)WHEEL 430";:ATTR2,4:LOC
    E145,1:PRINT"470)WHEEL 440";:ATTR2,4:LOC
    E146,1:PRINT"480)WHEEL 450";:ATTR2,4:LOC
    E147,1:PRINT"490)WHEEL 460";:ATTR2,4:LOC
    E148,1:PRINT"500)WHEEL 470";:ATTR2,4:LOC
    E149,1:PRINT"510)WHEEL 480";:ATTR2,4:LOC
    E150,1:PRINT"520)WHEEL 490";:ATTR2,4:LOC
    E151,1:PRINT"530)WHEEL 500";:ATTR2,4:LOC
    E152,1:PRINT"540)WHEEL 510";:ATTR2,4:LOC
    E153,1:PRINT"550)WHEEL 520";:ATTR2,4:LOC
    E154,1:PRINT"560)WHEEL 530";:ATTR2,4:LOC
    E155,1:PRINT"570)WHEEL 540";:ATTR2,4:LOC
    E156,1:PRINT"580)WHEEL 550";:ATTR2,4:LOC
    E157,1:PRINT"590)WHEEL 560";:ATTR2,4:LOC
    E158,1:PRINT"600)WHEEL 570";:ATTR2,4:LOC
    E159,1:PRINT"610)WHEEL 580";:ATTR2,4:LOC
    E160,1:PRINT"620)WHEEL 590";:ATTR2,4:LOC
    E161,1:PRINT"630)WHEEL 600";:ATTR2,4:LOC
    E162,1:PRINT"640)WHEEL 610";:ATTR2,4:LOC
    E163,1:PRINT"650)WHEEL 620";:ATTR2,4:LOC
    E164,1:PRINT"660)WHEEL 630";:ATTR2,4:LOC
    E165,1:PRINT"670)WHEEL 640";:ATTR2,4:LOC
    E166,1:PRINT"680)WHEEL 650";:ATTR2,4:LOC
    E167,1:PRINT"690)WHEEL 660";:ATTR2,4:LOC
    E168,1:PRINT"700)WHEEL 670";:ATTR2,4:LOC
    E169,1:PRINT"710)WHEEL 680";:ATTR2,4:LOC
    E170,1:PRINT"720)WHEEL 690";:ATTR2,4:LOC
    E171,1:PRINT"730)WHEEL 700";:ATTR2,4:LOC
    E172,1:PRINT"740)WHEEL 710";:ATTR2,4:LOC
    E173,1:PRINT"750)WHEEL 720";:ATTR2,4:LOC
    E174,1:PRINT"760)WHEEL 730";:ATTR2,4:LOC
    E175,1:PRINT"770)WHEEL 740";:ATTR2,4:LOC
    E176,1:PRINT"780)WHEEL 750";:ATTR2,4:LOC
    E177,1:PRINT"790)WHEEL 760";:ATTR2,4:LOC
    E178,1:PRINT"800)WHEEL 770";:ATTR2,4:LOC
    E179,1:PRINT"810)WHEEL 780";:ATTR2,4:LOC
    E180,1:PRINT"820)WHEEL 790";:ATTR2,4:LOC
    E181,1:PRINT"830)WHEEL 800";:ATTR2,4:LOC
    E182,1:PRINT"840)WHEEL 810";:ATTR2,4:LOC
    E183,1:PRINT"850)WHEEL 820";:ATTR2,4:LOC
    E184,1:PRINT"860)WHEEL 830";:ATTR2,4:LOC
    E185,1:PRINT"870)WHEEL 840";:ATTR2,4:LOC
    E186,1:PRINT"880)WHEEL 850";:ATTR2,4:LOC
    E187,1:PRINT"890)WHEEL 860";:ATTR2,4:LOC
    E188,1:PRINT"900)WHEEL 870";:ATTR2,4:LOC
    E189,1:PRINT"910)WHEEL 880";:ATTR2,4:LOC
    E190,1:PRINT"920)WHEEL 890";:ATTR2,4:LOC
    E191,1:PRINT"930)WHEEL 900";:ATTR2,4:LOC
    E192,1:PRINT"940)WHEEL 910";:ATTR2,4:LOC
    E193,1:PRINT"950)WHEEL 920";:ATTR2,4:LOC
    E194,1:PRINT"960)WHEEL 930";:ATTR2,4:LOC
    E195,1:PRINT"970)WHEEL 940";:ATTR2,4:LOC
    E196,1:PRINT"980)WHEEL 950";:ATTR2,4:LOC
    E197,1:PRINT"990)WHEEL 960";:ATTR2,4:LOC
    E198,1:PRINT"1000)WHEEL 970";:ATTR2,4:LOC
    E199,1:PRINT"1100)WHEEL 980";:ATTR2,4:LOC
    E200,1:PRINT"1200)WHEEL 990";:ATTR2,4:LOC
    E201,1:PRINT"1300)WHEEL 1000";:ATTR2,4:LOC
    E202,1:PRINT"1400)WHEEL 1100";:ATTR2,4:LOC
    E203,1:PRINT"1500)WHEEL 1200";:ATTR2,4:LOC
    E204,1:PRINT"1600)WHEEL 1300";:ATTR2,4:LOC
    E205,1:PRINT"1700)WHEEL 1400";:ATTR2,4:LOC
    E206,1:PRINT"1800)WHEEL 1500";:ATTR2,4:LOC
    E207,1:PRINT"1900)WHEEL 1600";:ATTR2,4:LOC
    E208,1:PRINT"2000)WHEEL 1700";:ATTR2,4:LOC
    E209,1:PRINT"2100)WHEEL 1800";:ATTR2,4:LOC
    E210,1:PRINT"2200)WHEEL 1900";:ATTR2,4:LOC
    E211,1:PRINT"2300)WHEEL 2000";:ATTR2,4:LOC
    E212,1:PRINT"2400)WHEEL 2100";:ATTR2,4:LOC
    E213,1:PRINT"2500)WHEEL 2200";:ATTR2,4:LOC
    E214,1:PRINT"2600)WHEEL 2300";:ATTR2,4:LOC
    E215,1:PRINT"2700)WHEEL 2400";:ATTR2,4:LOC
    E216,1:PRINT"2800)WHEEL 2500";:ATTR2,4:LOC
    E217,1:PRINT"2900)WHEEL 2600";:ATTR2,4:LOC
    E218,1:PRINT"3000)WHEEL 2700";:ATTR2,4:LOC
    E219,1:PRINT"3100)WHEEL 2800";:ATTR2,4:LOC
    E220,1:PRINT"3200)WHEEL 2900";:ATTR2,4:LOC
    E221,1:PRINT"3300)WHEEL 3000";:ATTR2,4:LOC
    E222,1:PRINT"3400)WHEEL 3100";:ATTR2,4:LOC
    E223,1:PRINT"3500)WHEEL 3200";:ATTR2,4:LOC
    E224,1:PRINT"3600)WHEEL 3300";:ATTR2,4:LOC
    E225,1:PRINT"3700)WHEEL 3400";:ATTR2,4:LOC
    E226,1:PRINT"3800)WHEEL 3500";:ATTR2,4:LOC
    E227,1:PRINT"3900)WHEEL 3600";:ATTR2,4:LOC
    E228,1:PRINT"4000)WHEEL 3700";:ATTR2,4:LOC
    E229,1:PRINT"4100)WHEEL 3800";:ATTR2,4:LOC
    E230,1:PRINT"4200)WHEEL 3900";:ATTR2,4:LOC
    E231,1:PRINT"4300)WHEEL 4000";:ATTR2,4:LOC
    E232,1:PRINT"4400)WHEEL 4100";:ATTR2,4:LOC
    E233,1:PRINT"4500)WHEEL 4200";:ATTR2,4:LOC
    E234,1:PRINT"4600)WHEEL 4300";:ATTR2,4:LOC
    E235,1:PRINT"4700)WHEEL 4400";:ATTR2,4:LOC
    E236,1:PRINT"4800)WHEEL 4500";:ATTR2,4:LOC
    E237,1:PRINT"4900)WHEEL 4600";:ATTR2,4:LOC
    E238,1:PRINT"5000)WHEEL 4700";:ATTR2,4:LOC
    E239,1:PRINT"5100)WHEEL 4800";:ATTR2,4:LOC
    E240,1:PRINT"5200)WHEEL 4900";:ATTR2,4:LOC
    E241,1:PRINT"5300)WHEEL 5000";:ATTR2,4:LOC
    E242,1:PRINT"5400)WHEEL 5100";:ATTR2,4:LOC
    E243,1:PRINT"5500)WHEEL 5200";:ATTR2,4:LOC
    E244,1:PRINT"5600)WHEEL 5300";:ATTR2,4:LOC
    E245,1:PRINT"5700)WHEEL 5400";:ATTR2,4:LOC
    E246,1:PRINT"5800)WHEEL 5500";:ATTR2,4:LOC
    E247,1:PRINT"5900)WHEEL 5600";:ATTR2,4:LOC
    E248,1:PRINT"6000)WHEEL 5700";:ATTR2,4:LOC
    E249,1:PRINT"6100)WHEEL 5800";:ATTR2,4:LOC
    E250,1:PRINT"6200)WHEEL 5900";:ATTR2,4:LOC
    E251,1:PRINT"6300)WHEEL 6000";:ATTR2,4:LOC
    E252,1:PRINT"6400)WHEEL 6100";:ATTR2,4:LOC
    E253,1:PRINT"6500)WHEEL 6200";:ATTR2,4:LOC
    E254,1:PRINT"6600)WHEEL 6300";:ATTR2,4:LOC
    E255,1:PRINT"6700)WHEEL 6400";:ATTR2,4:LOC
    E256,1:PRINT"6800)WHEEL 6500";:ATTR2,4:LOC
    E257,1:PRINT"6900)WHEEL 6600";:ATTR2,4:LOC
    E258,1:PRINT"7000)WHEEL 6700";:ATTR2,4:LOC
    E259,1:PRINT"7100)WHEEL 6800";:ATTR2,4:LOC
    E260,1:PRINT"7200)WHEEL 6900";:ATTR2,4:LOC
    E261,1:PRINT"7300)WHEEL 7000";:ATTR2,4:LOC
    E262,1:PRINT"7400)WHEEL 7100";:ATTR2,4:LOC
    E263,1:PRINT"7500)WHEEL 7200";:ATTR2,4:LOC
    E264,1:PRINT"7600)WHEEL 7300";:ATTR2,4:LOC
    E265,1:PRINT"7700)WHEEL 7400";:ATTR2,4:LOC
    E266,1:PRINT"7800)WHEEL 7500";:ATTR2,4:LOC
    E267,1:PRINT"7900)WHEEL 7600";:ATTR2,4:LOC
    E268,1:PRINT"8000)WHEEL 7700";:ATTR2,4:LOC
    E269,1:PRINT"8100)WHEEL 7800";:ATTR2,4:LOC
    E270,1:PRINT"8200)WHEEL 7900";:ATTR2,4:LOC
    E271,1:PRINT"8300)WHEEL 8000";:ATTR2,4:LOC
    E272,1:PRINT"8400)WHEEL 8100";:ATTR2,4:LOC
    E273,1:PRINT"8500)WHEEL 8200";:ATTR2,4:LOC
    E274,1:PRINT"8600)WHEEL 8300";:ATTR2,4:LOC
    E275,1:PRINT"8700)WHEEL 8400";:ATTR2,4:LOC
    E276,1:PRINT"8800)WHEEL 8500";:ATTR2,4:LOC
    E277,1:PRINT"8900)WHEEL 8600";:ATTR2,4:LOC
    E278,1:PRINT"9000)WHEEL 8700";:ATTR2,4:LOC
    E279,1:PRINT"9100)WHEEL 8800";:ATTR2,4:LOC
    E280,1:PRINT"9200)WHEEL 8900";:ATTR2,4:LOC
    E281,1:PRINT"9300)WHEEL 9000";:ATTR2,4:LOC
    E282,1:PRINT"9400)WHEEL 9100";:ATTR2,4:LOC
    E283,1:PRINT"9500)WHEEL 9200";:ATTR2,4:LOC
    E284,1:PRINT"9600)WHEEL 9300";:ATTR2,4:LOC
    E285,1:PRINT"9700)WHEEL 9400";:ATTR2,4:LOC
    E286,1:PRINT"9800)WHEEL 9500";:ATTR2,4:LOC
    E287,1:PRINT"9900)WHEEL 9600";:ATTR2,4:LOC
    E288,1:PRINT"10000)WHEEL 9700";:ATTR2,4:LOC
    E289,1:PRINT"11000)WHEEL 9800";:ATTR2,4:LOC
    E290,1:PRINT"12000)WHEEL 9900";:ATTR2,4:LOC
    E291,1:PRINT"13000)WHEEL 10000";:ATTR2,4:LOC
    E292,1:PRINT"14000)WHEEL 11000";:ATTR2,4:LOC
    E293,1:PRINT"15000)WHEEL 12000";:ATTR2,4:LOC
    E294,1:PRINT"16000)WHEEL 13000";:ATTR2,4:LOC
    E295,1:PRINT"17000)WHEEL 14000";:ATTR2,4:LOC
    E296,1:PRINT"18000)WHEEL 15000";:ATTR2,4:LOC
    E297,1:PRINT"19000)WHEEL 16000";:ATTR2,4:LOC
    E298,1:PRINT"20000)WHEEL 17000";:ATTR2,4:LOC
    E299,1:PRINT"21000)WHEEL 18000";:ATTR2,4:LOC
    E300,1:PRINT"22000)WHEEL 19000";:ATTR2,4:LOC
    E301,1:PRINT"23000)WHEEL 20000";:ATTR2,4:LOC
    E302,1:PRINT"24000)WHEEL 21000";:ATTR2,4:LOC
    E303,1:PRINT"25000)WHEEL 22000";:ATTR2,4:LOC
    E304,1:PRINT"26000)WHEEL 23000";:ATTR2,4:LOC
    E305,1:PRINT"27000)WHEEL 24000";:ATTR2,4:LOC
    E306,1:PRINT"28000)WHEEL 25000";:ATTR2,4:LOC
    E307,1:PRINT"29000)WHEEL 26000";:ATTR2,4:LOC
    E308,1:PRINT"30000)WHEEL 27000";:ATTR2,4:LOC
    E309,1:PRINT"31000)WHEEL 28000";:ATTR2,4:LOC
    E310,1:PRINT"32000)WHEEL 29000";:ATTR2,4:LOC
    E311,1:PRINT"33000)WHEEL 30000";:ATTR2,4:LOC
    E312,1:PRINT"34000)WHEEL 31000";:ATTR2,4:LOC
    E313,1:PRINT"35000)WHEEL 32000";:ATTR2,4:LOC
    E314,1:PRINT"36000)WHEEL 33000";:ATTR2,4:LOC
    E315,1:PRINT"37000)WHEEL 34000";:ATTR2,4:LOC
    E316,1:PRINT"38000)WHEEL 35000";:ATTR2,4:LOC
    E317,1:PRINT"39000)WHEEL 36000";:ATTR2,4:LOC
    E318,1:PRINT"40000)WHEEL 37000";:ATTR2,4:LOC
    E319,1:PRINT"41000)WHEEL 38000";:ATTR2,4:LOC
    E320,1:PRINT"42000)WHEEL 39000";:ATTR2,4:LOC
    E321,1:PRINT"43000)WHEEL 40000";:ATTR2,4:LOC
    E322,1:PRINT"44000)WHEEL 41000";:ATTR2,4:LOC
    E323,1:PRINT"45000)WHEEL 42000";:ATTR2,4:LOC
    E324,1:PRINT"46000)WHEEL 43000";:ATTR2,4:LOC
    E325,1:PRINT"47000)WHEEL 44000";:ATTR2,4:LOC
    E326,1:PRINT"48000)WHEEL 45000";:ATTR2,4:LOC
    E327,1:PRINT"49000)WHEEL 46000";:ATTR2,4:LOC
    E328,
```

"I say, Old Chap, Have You Heard the Latest?"



Hello, hello, hello! I've been here a month now, and I thought it would be a good idea to let you know who I am!

I would like to introduce myself to you all as your one and only....Tandy 1000 editor! (and IBM stuff too!)

Deon is the name. I have been asked to join the crowd here and work personally on your efforts towards learning more about the Tandy 1000 and IBM.

One of our main ambitions is to make Softgold Magazine more IBM compatible oriented. I had noticed, as a reader of Softgold, quite a few people writing in asking for more and more Tandy 1000 programs, but not a lot were printed each month. Being a Tandy 1000 owner I agree! So now, there is going to be a dramatic change! I am here!

So... T1000 users, if you have anything, from gossip to software that you would like to share, please send it in to me. If you also have queries, problems or anything you would like to know, I will do my best to get you the right information.

I can be caught here during the week, or

if you would like to send Viatel messages to me, please do. You may send your messages on page *64213#, or mailbox 755100150 or to my mailbox 753517750.

During my silent month here, I finally got Golddisk number 1 fixed, Number 2 and 3 out and running - Golddisk number 4 should be out soon, too. (It would be out sooner if

I had more contributions from all the brilliant Tandy 1000 and IBM users!)

Over my next few issues I plan to put some articles in about MS-DOS and BASIC, so if there is anything you would like me to cover first, please let me know!

This month we feature an article on backing up disks, one of the most important things you should be capable of doing.

There are always times when you accidentally ruin disks, I know what it is like. We do it all the time with Gertie (our Viatel update computer). When she loses the bulletin board frames, (we can nearly predict when she will throw a disk to the dump), the task of getting them back is now a nightly event! So if you are a beginner or experienced computer user, the first thing to learn is to back up disks.

Have fun!

1000'S OF HINTS! (well a couple anyway)

There are two ways of erasing files off your disk. You can either type ERASE filename.ext or type DEL filename.ext and both commands will do the same thing. DEL is quicker to type (it's short for DElete).

BOOKS

There are two books I recommend if you would like to learn more about your MS-DOS and how to organise your disks effectively. These two books tell you all about your MS-DOS disks which you received when you first bought your computer.

Volume one is called MS-DOS The Basics (cat no:25-1506) tells you all the little tricks you need to know about your DOS. This book will tell you about your MS-DOS disks in brief, so you can get started.

Volume two is called MS-DOS Advanced Applications (cat no:25-1507) goes into more detail about your DOS. (Recommended after you have finished and understood volume one!) Both books are available from most Tandy stores.

"What are all these names on my MS-DOS disk" a question many people have asked me!

Well here is a brief summary of the ones which will be useful to you...

ANSI.SYS - is a device driver which means it is loaded in when you first start your computer. It enables you to change colours on the screen and change the keyboard to suit your requirements.

APPEND.COM - searches directorys for files. If you don't use any parameters, it will display the current path (Which part of the disk you are using).

ASSIGN.COM - This program enables you to 'force' the computer to read a disk drive.

For example when you say DIR B: you can actually program it to give a DIRectory of A:
ATTRIB.EXE - Enables/disables the READ ONLY attribute which is put with filenames. For example you can make files on the disk read-only so you don't erase them.

AUTOEXEC.BAT - A BATCH program which is AUTomatical EXECuted when the computer is turned on or reset.

BASIC.AXE

BASIC.COM - Program that allows you to make BASIC programs.

CHKDSK.COM - A utility which Checks Disks for usage and free space. Will also fix up faulty directories and file allocation tables.

COMMAND.COM - COMMANDs the computer as to what to do next. (This is required when you first turn the computer on or reset it.)

DEBUG.COM - A utility which enables you to modify memory and disks.

DISKCOMP.COM - DISK COMPare. Compares two disks and reports their differences.

BACK TO BACK UP

BY
DEON GEORGE

The most important thing you ever do with any computer is BACK UP the software!!

I put that in capital letters because so many computer users 'accidentally' erase their master disks.

Whenever you buy any software (tape or disk), make sure you have ample tapes or disks to take copies of your programs, just in case something goes wrong (and it will in your computer using life!!)

When I was working for Tandy, (and even now working for Goldsoft), I had some unfortunate people say they have had problems with the software they have bought. They would bring in their master disk with one or two or all (!) of the most important files accidentally erased! (Someone had accidentally formatted their MS-DOS disk!!)

Making backups of your disks does a number of things for you!

1. It saves you the embarrassment of going in and being told (in a polite way) that you are a fool for not backing them up (not that we'd say it quite like that at Goldsoft!!)

2. It saves you the worry of not getting the work done or even trying to figure out what you have done!

3. It saves you time, since you can fix the problem by copying the master disk again.

One thing to remember. If you think you may have done something wrong to the computer and the software doesn't run properly, try getting the original and recopy the programs and start again. It does help... when you get totally stuck, then call for help!

A good thing to remember is keep an eye on the screen whenever you push any button and see 'what happens next', because a good program will tell you if you have done something wrong - or will pre-warn you if it is going to do anything drastic, usually it will also prompt you what to do next.

The procedure to backup your disks (whether they are your brand new master disks, your MS-DOS disk, Deskmate disk, or your every day work disk) is as follows:

1. Make sure you have a spare disk (brand new disks or ones you won't be using again) for each backup

For example, if your software comes with 6 disks, make sure you have AT LEAST 6 disks to make your copies. It is probably a good idea to have one or two more, because some software requires a data disk, which normally isn't supplied. (When you purchase the software and the salesman asks you if you have any blank disks, don't think of it as a sales pitch, he or she is making sure you have enough blank disks to make copies of the programs you have bought).

Here are some terms, which I think should be made clearer before I show you how to back up your disks:

USER DISK - is your everyday disk which you use without any worry if you do accidentally erase it.

MASTER DISK - This is the disk which comes with your particular software package. This is really only there to be used if your user disk(s) crash and become unusable. When you

use this disk all you do is copy the information over to a USER disk and put it away again (in a safe place!).

DATA DISK - is normally a disk set up to have just data on it for a particular software package. For example having a list of names and addresses, letters, worksheets, etc.

BACKUP DISK - is used to backup data so if you accidentally crash or erase your DATA disk, you can copy the information back on to your DATA disk. (This saves you the hassle of retyping those letters, or names and address which you have been putting in over the months!) This disk is used the same way as a master disk, except that normally a DATA disk is backed up on an every day basis, whereas a master disk you NEVER write data to!

2. Get your copy of your MS-DOS disk (if you haven't backed it up already, we shall do so now!). Also get your new disks and master disk.

3. Decide whether you have a

two disk drive system, or a one disk drive system. (I know this shouldn't be too hard!) I will tell you how to back up using both systems.

4. Remember that your bottom disk (on the Tandy 1000, and most computers) is called drive A: and the top is called (if you have one) B: If you still are unsure, the A: drive is the drive which lights first when you turn your computer on.

5. Turn on your computer (as you would normally and if you don't know refer to your operation manual), put in the MS-DOS disk to get the computer going! It may ask for the date and time. Put in the date if you wish, but otherwise press enter. Wait for the A> prompt to appear.

6. Put a new disk in drive B: (this new disk will be TOTALLY erased, so if you are going to put in an old disk, make sure it is one that is NOT required any longer!) If you only have one disk drive keep your new disk in your hand for now!

and put in the new disk and press the appropriate key to continued the copy. You shall be prompted to swap the disks until the copy is complete.)

When the copy is complete, take your MASTER disk and put it away, for safe keeping.

A few other terms which you may come across which may confuse you!

MS-DOS: this is the disk which your computer needs for start up. Like a car needs petrol for the engine to start, the computer needs 3 files off this disk (two are hidden and the third called command.com) to get the computer up and running. These 3 programs tell the computer how to work!

DISKCOPY: a program found on your MS-DOS diskette which enables you to copy the contents of one disk to the other.

DIR: is the command to get a DIRectory of what is on a disk. DIR B: will tell you what is on drive B:. DIR A: will tell you what is on drive A: and plain DIR will tell you what is on the drive you are using. To swap

The most important step you can do, with any computer, is to back up the software!

7. Type DISKCOPY A: B: <ENTER> (even if you only have one disk drive!)

8. Make sure the MASTER disk which you are going to copy has a write protect tab on it. (This piece of tape goes over the slot which has been cut on the right side of the disk. This will stop any information being written to the disk. (Same system as a cassette.)

9. When the screen prompts you for a SOURCE disk in drive A: put in the MASTER disk you want to copy. (If you haven't backed up your MS-DOS disk, we shall do it now so leave it in the drive). If you have a second disk drive put the new disk in drive B:. If you haven't don't worry, just yet!

10. Press the appropriate key to start the copy (normally <ENTER>) This copy program will copy the contents of disk drive A: to the contents of disk drive B: (If you have only one drive, after a short while the computer will prompt for the TARGET disk to be inserted into disk drive A:. Take out your MASTER disk

drives just type the drive name (A:, B:, C:, etc if you have drives C: onwards) and <ENTER> and the new prompt tells you what drive you are using.

COPY: is a command which you use to copy single files from one disk to another. Where as DISKCOPY copies the entire disk from one to another. The format for this is:

COPY d:filnam.ext d:filnam.ext
where the first d:filnam.ext is the program to copy and the second, where to copy it to and what name to give it.

If there is anything you feel I haven't covered or you would like to know a little more about something else, or even if you don't know about something and you would like me write about it next month, please address your letters to:

DEON'S DESK
GOLDSOFT PUBLISHING
PO BOX 1742,
SOUTHPORT QLD 4215
or leave a message on Viatel number 753517750, 755100150 or page number #64213#

KING'S QUEST

by Sierra

Minimum Memory:256K

Requirements:CGA

IBM or Compatible

Cost:\$69.95

Available from
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Well at first, I wasn't overly impressed! I had played with it before for a few minutes and it didn't compare at all to Space Quest or Leisure Suit Larry. But, I persisted!

King's Quest comes in your everyday software presented box. In the box there are two disks, a well presented introductory booklet and a catalogue.

Reading the introductory booklet was, for once, worth the ten minutes it took. It gives you a brief introduction on the scene and what you are out to achieve.

Poor King Edward has had a few bad years and you being his number one knight are given the task of recovering all his past treasures. The mirror that reads the future, a shield which always give you victory in battle and the magic chest of gold.

Another convenient thing about all Sierra adventure games is the ability to use back up disks when playing the game.

Even though the originals are copy protected, you only need them to start the game. Once the computer has verified original, you may put in your backed up disks and play.

Once I got into the game, I had to be dragged off! It wasn't as boring as I had first imagined. Although I must say, everything has been pretty easy so far!

Through the adventure, you come across a few familiar characters from stories heard when you were young! There is the witch with the ginger bread house. A gnome with a gold key - and you must guess his name!

With this in mind, I would recommend this piece of software to your children. If you feel your children are able to act as the character and question the computer to get solutions then by all means give them a go! It's a great way of getting them 'out of the way' for a few hours, or even yourself!

Out of ten I would give it an eight and a half! I thought it was very enjoyable, but still I do think Leisure Suit Larry and Space Quest are a lot better.

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1001 PC-WRITE + — Part 2 as above.

0054 SIDE-WRITER — It will allow your printer to print SIDEWAYS on paper! a must for lotus users!

0051 EZ-FORMS — allows you to generate master forms tailored to your need. Super for business.

0028 PC-MUSICIAN — Great programme, you can create and play songs on your PC!

1003 PC-FILE + — Just when you thought PC-FILE couldn't get any better File + create new standard in Database managers, comes in 2 diskettes, this is part 1, it is easier, faster and more... more powerful.

1004 PC-FILE + — Part 2 as above.

0130 PERSONAL FINANCE MANAGER — Good personal accounting system. You can keep track of all household money matters from Cheque account to Investments.

0148 PC-TOUCH — Your Computer will be your typing tutor, let you go at your own pace and keep track of how well you are doing.

0147 SLIDE — Images can be created, edited, saved, displayed and printed using the programme. Handy for Desktop Publisher.

0172 THE LIBRARY for lotus — 20 Super worksheets for lotus 123, from Cheque Book balancer. Cash Flow Manager to New Venture Budget!

0197 HARD DISK UTILITIES — Super collection of Hard disk Utilities from a utility tells you which files have not been backed up to the one helps you create sub-directory no one knows about but you!

0174 KID'S WORD PROCESSOR — Excellent word processor written for Children (and adult too!) in super colour and sound, features graphic menus and the lot!

0175 PC-DRAW # 1 — A must as a part of your Desktop Publishing Library, it is a combination of programmes, providing keyboard, screen drawing, graphics printing and slide show capability.

0176 PC-DRAW # 2 — A selection of drawings and pictures made by PC-Draw #1, plus a super slide show, you must have PC-DRAW #1 to be able to use it.

0201 PROCOMM — The professional communications programme, if you have a Modem then you need Procomm.

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dotplay

T 1000

By Leigh Dawes

Children will always have to learn our traditional number system. A calculator is useless, unless one knows the number system.

We usually learn to count by repeating the counting sequence. A child would probably learn to count to five by counting from one to five repeatedly until they can recite them by heart. Then, they will do the same thing with one through to ten, then twenty, until they realize that our number system is decimal (base 10).

"Join The Dots" is a traditional game of pencil and paper, whereby with the dots already marked, the participant joins all the dots together to eventually draw a picture. Usually, the first number is one and the last number varies according to the picture.

One day I was watching Jackie try to draw a "Dot to Dot", and I realized the potential for children to practice the number system at an early age using computers. The outcome was the program named "DOT".

"DOT" allows a random selection of dots or a file selection of dots. In the random selection, the computer asks you how many dots the child would like to play with, and the response from you is the maximum number of dots to be displayed. The computer will randomly display dots on the screen and the child will enter the number of the current dot. This being successful, the computer will draw a line between the relevant dots. This will continue until the maximum number selected by you (or your child) is reached.

In the file selection, the computer loads a file and uses this file to determine what must be set up on the screen. These files are created prior to the child playing with the program. Up to nine files are used to determine what picture you want displayed to the child.

These files have the extension of .PIC and are created before the program is run. As mentioned, the user can have up to 9 of these files, starting from PIC1.PIC, then PIC2.PIC, ..., and eventually, PIC9.PIC.

The way to create these files are easy. Your screen should be made up of 640 pixels across and 200 down. The program uses pixel number 8 to 560 across and from pixel number 8 to 177 down. This means that no coordinates must be out of this range. The

EDUCATION TANDY 1000

coordinates of 8,8 would be on the top left hand of the screen and 550,177 would be on the bottom right hand of the screen. These would be written in a file as follows: 8 8 550 177. Instead of commas separating the numbers we only need a space. 8 8 550 177 would draw a line from the top left hand corner to the bottom right hand corner. The program needs at least one of these files created to use the file selection mode. With no file present, only the random selection mode may be used.

To create type as follows:

```
COPY CON PIC1.PIC
100 40 100 130 300 130 300 40
110 40 <Ctrl z> <CR>
COPY CON PIC2.PIC 300 20 80
130 300 130 520 130 310 25
<Ctrl z> <CR>
```

Note: <Ctrl z> means while pressing the control key, press the letter z. <CR> means the enter or return key.

Using this method you can make the other 7 files as needed. The files contain pairs of coordinates. The X coordinate first then the Y coordinate. Using this method creation of a .PIC file is easy. Once these files are created you can run the program "DOT" for the child. They think it is a game but in reality, they are practicing to count.

I hope you have as much success with this program for your child as I did with my own. I found that I could leave Jackie by herself with little problems.

Here are the other seven files I had my daughter practicing on.

COPY CON PIC3.PIC

```
300 20 200 130 420 50 180 50
400 130 310 30 <Ctrl z> <CR>
```

COPY CON PIC4.PIC

```
300 20 160 90 300 160 440 90
310 25 <Ctrl z> <CR>
```

COPY CON PIC5.PIC

```
305 20 340 40 340 60 320 80
360 70 400 70 440 90 440 110
400 180 <CR>
```

```
360 130 310 110 360 160 220
160 250 110 220 130 180 130
140 <CR>
```

```
110 140 90 180 70 220 70 260
80 240 60 240 40 275 20 <Ctrl
z> <CR>
```

COPY CON PIC6.PIC

```
305 60 340 40 380 20 420 20
460 40 460 60 440 80 420 100
380 <CR>
```

```
120 340 130 290 150 240 130
200 120 160 100 140 80 120 60
120 40 <CR>
```

```
160 20 200 20 240 40 275
60 <Ctrl z> <CR>
```

COPY CON PIC7.PIC

```
305 20 340 40 380 60 420 80
440 100 440 120 400 140 360
140 320 <CR>
```

```
120 340 150 360 170 280 170
220 170 240 150 260 120 220
140 180 <CR>
```

```
140 140 120 140 100 160 80
200 60 240 40 275 20 <Ctrl
z> <CR>
```

COPY CON PIC8.PIC

```
275 50 350 50 400 50 500 50
500 100 500 150 400 150 350
150 300 <CR>
```

```
150 250 150 200 150 100 150
100 100 100 50 200 50 250
50 <Ctrl z> <CR>
```

COPY CON PIC9.PIC

```
305 30 340 30 380 50 420 70
420 100 420 120 380 140 340
160 <CR>
```

```
305 160 275 160 240 160 200
140 160 120 160 100 160 70
200 50 240 <CR>
```

```
30 280 30 <Ctrl z> <CR>
```

Try creating your own little pictures for your child. When the player is practicing counting, he/she will start from one and continue until a maximum number is encountered. When one is entered no line will be drawn, but lines will be drawn from two onwards. Originally, the program started from two, but is that a way to teach a young child the number system. I promptly altered it to start from one.

Once you have the program running, try modifying the program. Normally, the computer displays from dot 1 to dot N (where N is the maximum set). Imagine that N was dot 10. Instead of displaying and receiving dot numbers 1 to 10, try to modify the program so that it will display from 35 to 44 or 51 to 60, maybe at random. This will give the child some more practice. Another thought is instead of incrementing the count by one try to increment the count by 5 or 8, etc. I'll leave this to you.

Happy Computing,

by Leigh Dawes

(051) 745552 for questions and comments.

```

{$U-, R+, C-}

{ Join the dots. A good counting game. }
program JOINDOTS (Input, Output, Infile);
const
  MINDOT    = 1;  MAXDOT = 40;      {maximum number of dots in random mode}
  LINEWIDTH = 80;                      {Screen width}
  BELL      = 7;   {ASCII code for bell}
  COLOR     = 5;   {Color of foreground}
  MINX      = 8;   MAXX = 550;      {coordinates}
  MINY      = 8;   MAXY = 177;
  MAXFILE   = 9;                          {number of picture files available}
type
  STRLINEWIDTH = string [LINEWIDTH];
  DOTS         = array [MINDOT..MAXDOT] of INTEGER;
var
  DOTX, DOTY          : DOTS;
  CHOICE, FILENO,
  MAXDOTNUM, ERROR,
  CURDOT, DOTCOUNT,
  LASTDOT, XCORD, YCORD : INTEGER;
  GAMEOVER, FINISHED   : BOOLEAN;

{ Clears the screen. Swap CLRSCR to whatever is
  appropriate on your machine. }
procedure CLEARSCREEN;
begin
  CLRSCR {non standard pascal. This clears the screen}
end; {CLEARSCREEN}

{ Increments NUMBER }
procedure INC (var NUMBER : INTEGER);
begin
  NUMBER := NUMBER + 1;
end; {INC}

{ Prints a character COUNT times. }
{ * Recursive * }
procedure STRINGPRINT (COUNT      : INTEGER;
                      CHARACTER : CHAR);
begin
  if Count > 0 then
    begin
      WRITE (CHARACTER);
      STRINGPRINT (COUNT - 1, CHARACTER)
    end; {else}
end; {STRINGPRINT}

{ Outputs a number of blank lines according to LINES. }
procedure STEP (LINES : INTEGER);
var
  COUNT : INTEGER;
begin
  for COUNT := 1 to LINES do
    WRITELN
end; {STEP}

{ Print INSTRING in the centre of WIDTHLINE }

```

```

procedure CENTER      (INSTRING {input} : STRLINEWIDTH;
                      WIDTHLINE {input} : INTEGER);
var
  L : INTEGER;           {This is our temporary variable}
begin {CENTER}
  L := LENGTH (INSTRING);    {What is the length of our string}
  L := L div 2;             {What is the centre}
  WIDTHLINE := WIDTHLINE div 2; {Find out what is half of the linewidth}
  L := WIDTHLINE + L;       {Where is the last character position}
  WRITELN (INSTRING :L)     {Now print the string}
end; {CENTER}

{ Get number from keyboard }
procedure GETNUM {var NUMBER {output} : INTEGER};
var
  NUMSTR : string [4];
begin
  READ (NUMSTR);           { Read a string from Input }
  VAL (NUMSTR, NUMBER, ERROR); { Convert it to a number }
end; {GETNUM}

{ Introduction to program called "DOT" }
procedure INTRO;
var CH : CHAR;
  X, Y : INTEGER;

{ Draws diamond shape.}
procedure DRAWDIAMOND (X, Y {input} : INTEGER);
const
  HEIGHT = 10;
  COLOR = 5;
begin
  DRAW (X - HEIGHT, Y, X, Y - HEIGHT, COLOR);
  DRAW (X, Y - HEIGHT, X + HEIGHT, Y, COLOR);
  DRAW (X + HEIGHT, Y, X, Y + HEIGHT, COLOR);
  DRAW (X, Y + HEIGHT, X - HEIGHT, Y, COLOR);
end; {DRAWDIAMOND}

begin
  CLEARSCREEN;
  HIRES; {Get hi resolution screen}
  STEP (5); {print some blank lines}
  CENTER ('J O I N   T H E   D O T S ver 1-3', LINEWIDTH);
  STEP (2);
  CENTER ('an educational game for Jackie Dawes', LINEWIDTH);
  STEP (5);
  CENTER ('By Leigh Dawes', LINEWIDTH);
  CENTER ('<C>opyright 1987', LINEWIDTH);
  CENTER ('(051) 745552 for questions or comments.', LINEWIDTH);
  STEP (2);
  CENTER ('Press any key to continue!!', LINEWIDTH);

  { Draw the diamond shapes }
  X := 20;
  while X < 620 do
    begin {while}
      DRAWDIAMOND (X, 175);
      DRAWDIAMOND (X, 15);
      X := X + 10
    end; {while}
  Y := 15;

```

```

        while Y < 178 do
            begin {while}
                DRAWDIAMOND (20,Y);
                DRAWDIAMOND (620,Y);
                Y := Y + 10
            end; {while}
        READ (KBD, CH); { Wait for keypress }
    end; {INTRO}

{ Set the screen according to random or file choice }
procedure SETBOARD (CHOICE : INTEGER;
                    var FILENO : INTEGER);
var
    WITHINRANGE : BOOLEAN;

{ Create the random dots }
procedure CREATEDOTS;
var
    XPOS, YPOS,
    LASTX, LASTY, X, Y, XWIDTH, YWIDTH, COUNT : INTEGER;
begin {CREATEDOTS}
    { Initialize some variables }
    XWIDTH := MAXX;      YWIDTH := MAXY;
    X := 1;              Y := 1;

    { Prepare graphics screen }
    CLEARSCREEN;
    HIRES;               {Get hi resolution screen}

    { Draw dots on screen }
    for COUNT := MINDOT to MAXDOTNUM do
        begin {for}
            LASTX := X;    LASTY := Y;
            repeat
                X := RANDOM (XWIDTH);
                Y := RANDOM (YWIDTH);
            until ((ABS (LASTX - X) > 5) and (ABS (LASTY - Y) > 5)) and
                  ((X > MINX) and (Y > MINY));
            DOTX [COUNT] := X;           { Save our dots }
            DOTY [COUNT] := Y;           { in our arrays }
            DRAW (X,Y,X,Y,COLOR);      { Draw the dot }

            { Print the number to the screen }
            XPOS := X DIV 8;          YPOS := Y DIV 8;
            GOTOXY ( X div 8, Y div 8 );
            WRITE (COUNT)
        end {for}
    end; {CREATEDOTS}

{ Get dots from a file }
procedure GETFILE (var FILENO : INTEGER);
var
    XPOS, YPOS,
    LASTX, LASTY, X, Y, XWIDTH, YWIDTH, COUNT : INTEGER;
    INFILE : TEXT;
    FILENAME : string [12];
    TEMP : string [2];
begin {GETFILE}
    { Initialize some variables }
    XWIDTH := MAXX;      YWIDTH := MAXY;
    X := 1;
    Y := 1;

```

```

COUNT := 1;

{ Prepare screen }
CLEARSCREEN;
HIRES;           {Get hi resolution screen}

{ Prepare next file to load }
STR <FILENO,TEMP>;          { Convert file number to string   }
FILENAME := 'PIC' + TEMP + '.PIC'; { Create file name      }
INC <FILENO>;                { Ready file number for next file  }
if FILENO > MAXFILE then     { Check for maximum file number   }

    FILENO := 1;
ASSIGN <INFILE, FILENAME>;      { Switch error handling off   }
{$I-}                           { Open file for input      }
RESET <INFILE>;               { Switch error handling on   }
{$I+}                           { Zero means no errors     }

if IoResult = 0 then
begin
    while not EOF <INFILE> do
        begin {for}
            LASTX := X;  LASTY := Y; { Save present coords  }
            READ <INFILE,X,Y>;       { Read coords from file}
            DOTX [COUNT] := X;       { Save Coords in array  }
            DOTY [COUNT] := Y;
            DRAW <X,Y,X,Y,COLOR>;  { Draw dot on screen   }

            { Print dot number on screen }
            XPOS := X DIV 8;  YPOS := Y DIV 8;
            GOTOXY < X div 8, Y div 8>;
            WRITE (COUNT);
            INC <COUNT>;
        end; {for}
        MAXDOTNUM := COUNT - 1;
        CLOSE <INFILE>;
    end {if no I/O error}
else
    if TEMP = '1' then
        FILENO := 0 { Show calling procedure that no files exist}
    else
        begin
            FILENO := 1;      { Reset fileno to first file }
            GETFILE <FILENO>; { and call again }
        end; {if}
end; {GETFILE}

begin {SETBOARD}
if CHOICE = 1 then
{ Random picture selected }
begin
repeat
    CLEARSCREEN;  GOTOXY (1,24);
    WRITE ('Enter maximum number of dots. (',
           MINDOT + 1, '-', MAXDOT, ') : ');
    GETNUM <MAXDOTNUM>;
    GOTOXY (1,24);           { Position cursor      }
    STRINGPRINT <80,' '};    { Blank line         }
    WITHINRANGE := {MAXDOTNUM > MINDOT)
                        and {MAXDOTNUM <= MAXDOT)
                        and {ERROR = 0};

    if not WITHINRANGE then
        WRITE (CHR (BELL));
until WITHINRANGE;
CREATEDOTS {choose coordinates and put in array}
end

```

```

    else
        { File picture selected }
        GETFILE (FILENO)
end; {SETBOARD}

{ Prompt user for dot number and accept from keyboard }
procedure GETNUMBER (var CURDOT {output} : INTEGER);
var VALID : BOOLEAN;
begin {GETNUMBER}
    repeat
        GOTOXY (1,24); { Position cursor }
        WRITE ('Enter dot number : '); { Prompt user }
        GETNUM (CURDOT); { Get number }
        GOTOXY (1,24); { Position cursor }
        STRINGPRINT (80,' ');
        VALID := (CURDOT >= MINDOT) and { Blank line }
                (CURDOT <= MAXDOT) and (ERROR = 0);
    until VALID;
end; {GETNUMBER}

{ Join dots with a line }
procedure JOINDOT (LASTDOT, DOTNUM {input} : INTEGER);
begin
    DRAW (DOTX [LASTDOT], DOTY [LASTDOT],
          DOTX [DOTNUM] , DOTY [DOTNUM ],
          COLOR)
end; {JOINDOT}

{ Find out if another game is required. Returns true game to continue }
function CONTINUEGAME : BOOLEAN;
var
    CH : CHAR;
    DONE : BOOLEAN;
begin
    GOTOXY (1,24);
    STRINGPRINT (80,' '); { Blank line}
    WRITE ('Another game ? (Y/N) ');
    repeat
        READ (KBD, CH); { Get character from keyboard }
        CH := UPCASE (CH);
        DONE := (CH = 'Y') or (CH = 'N');
        if not DONE then
            WRITE (CHR (BELL))
    until DONE;
    CONTINUEGAME := CH = 'Y'
end; {CONTINUEGAME}

{ Get choice of random or file dots.}
function GETCHOICE : INTEGER;
var
    ERROR, CHOICE : INTEGER;
    CH : CHAR;
begin
    CLEARSCREEN;
    WRITE ('1. Random or 2. Pictures : ');
    repeat

```

```

READ (KBD, CH);
VAL (CH, CHOICE, ERROR);
until (CHOICE in [1..21] and (ERROR = 0));
GETCHOICE := CHOICE
end; {GETCHOICE}

{ Use different seed for random function.}
procedure RandomizeMachine;
begin
  RANDOMIZE; { Use appropriate randomizing statement }
end; {RandomizeMachine}

begin {JOINDOTS}
  RandomizeMachine;

  { Set file number even though there may be no files }
  FILENO := RANDOM (MAXFILE) + 1;

  { Display opening screen }
  INTRO;

  repeat
    CHOICE := GETCHOICE; { Random or file selection }
    SETBOARD (CHOICE, FILENO); { Display dots }
    if FILENO <> 0 then
      begin
        LASTDOT := MINDOT; { Initialize LastDot }
        DOTCOUNT := MINDOT; { and DotCount }
        repeat
          repeat
            GETNUMBER (CURDOT); { Prompt and get user number }
            if CURDOT <> DOTCOUNT then
              begin {if}
                WRITE (CHR (BELL));
                GOTOXY (1, 24);
                STRINGPRINT (80, ' ');
                GOTOXY (1, 24);
                WRITE ('The next number is ', DOTCOUNT);
                DELAY (1500);
                GOTOXY (1, 24);
                STRINGPRINT (80, ' ')
              end {if}
            until CURDOT = DOTCOUNT;
            JOINDOT (LASTDOT, CURDOT); { Join the last dot with the
                                         the current dot with a line }
            if LASTDOT < DOTCOUNT then
              INC (LASTDOT);
              INC (DOTCOUNT);
            FINISHED := MAXDOTNUM = (DOTCOUNT - 1);
            until FINISHED;
            GAMEOVER := not (CONTINUEGAME); { Find out if another
                                             game required.}
          end
        else
          GAMEOVER := TRUE; { No files present so abort }
      until GAMEOVER; { GameOver will be false if so. }
      CLEARSCREEN;
      if FILENO = 0 then { No .PIC files present }
        WRITELN ('There must be at least one .PIC file on disk.');
  end. {JOINDOTS}

```

continued overleaf

DATE CONVERSION



by John Carmichael

SUBROUTINE

The Listing:

```

570 ' -----
572 ' DATE CONVERSION Subroutine (gosub 600)
574 '
576 ' Uses the system date in form MM/DD/YY or MM/DD/YYYY
578 ' suitable for B-DOS or GW-BASIC's DATE$
580 ' eg DATE$="11/21/87" -- DAT$="21st November, 1987"
582 ' exit: DAT$ contains Date
584 ' uses: D, D1, DY$, D$, M$
586 ' -----
588 '
590 DATA January, February, March, April, May, June
592 DATA July, August, September, October, November, December
600 RESTORE
610 FOR D=1 TO VAL(DATE$):READ M$:NEXT' Get month name into M$
620 D=VAL(MID$(DATE$,4,2)):D1=VAL(MID$(DATE$,5,1))
630 DY$=MID$(" "+STR$(D),4,2) ' 2 letter DAY string
640 D$="th":IF D>4 AND D<21 THEN 660
650 IF D1=1 THEN D$="st" ELSE IF D1=2 THEN D$="nd" ELSE IF D1=3 THEN D$="rd"
660 DAT$=DY$+D$+" "+M$+", 19"+RIGHT$(DATE$,2)
670 RETURN
Φ

```

DOT PLAY: continued from previous page

Note: UPCASE is a function which returns a character in upper case which was either upper or lower case.

eg. Writeln (Upcase ('a')); will print a capital A.

Writeln (Upcase ('A')); will also print a capital A.

If your version of Pascal doesn't support this try the following.

```

function UpCase (Ch : Char) : Char;
begin
  if Ch in ['a'...'z'] then
    UpCase := Chr (Ord (Ch) - 32)
  else
    UpCase := Ch;
end; {UpCase}
Φ

```

Here is a good utility for you to put into all your programs which uses the date in some form!

What it does, it takes the system date (which is held in the DATE\$ command) and turns it into a formal looking date!

For example, when the DATE\$="01/09/87", you would assume it meant the 1st of September, but actually it says the 9th of January (American set up). If you use this utility, the DAT\$ which holds the information will say - 9th January, 1987. Nice and neat!

All you need to do is put this in your program using the same line numbers and putting a GOSUB 600 at the beginning of your program to get the DAT\$ information. Then it is no longer required (unless you change the date of course!).



T 1000

CROSSWORD

by Deon George

EDUCATIONAL

The Listing:

```

1' ***** Cross word puzzle *****
2 GOTO 10
3 SAVE "crosword",A
10 SCREEN 0:WIDTH 40:KEY OFF:COLOR 15,0:CLS
20 COLOR 1,15
21 PALETTE 4,1:PALETTE 2,1:PALETTE 14,1:PALETTE 6,1:PALETTE 5,1
22 A00=300:
100 LOCATE 7,10: PRINT"....."
110 LOCATE 8,10: PRINT"....."
120 LOCATE 9,10: PRINT"....."
130 LOCATE 10,10: PRINT"....."
140 LOCATE 11,10: PRINT"....."
150 LOCATE 12,10: PRINT"....."
160 LOCATE 13,10: PRINT"....."
170 LOCATE 14,10: PRINT"....."
171 LOCATE 15,10: PRINT"....."
180 COLOR 4:LOCATE 8,11: PRINT "P";:FOR LOOP=1 TO A00:NEXT LOOP
185 IF INKEY$="" THEN A00=1
190 COLOR 4:LOCATE 9,12: PRINT "U";:FOR LOOP=1 TO A00:NEXT LOOP
195 IF INKEY$="" THEN A00=1
200 COLOR 4:LOCATE 10,13:PRINT "Z";:FOR LOOP=1 TO A00:NEXT LOOP
205 IF INKEY$="" THEN A00=1
210 COLOR 4:LOCATE 11,14:PRINT "Z";:FOR LOOP=1 TO A00:NEXT LOOP
215 IF INKEY$="" THEN A00=1
220 COLOR 4:LOCATE 12,15:PRINT "L";:FOR LOOP=1 TO A00:NEXT LOOP
225 IF INKEY$="" THEN A00=1
230 COLOR 4:LOCATE 13,16:PRINT "E";:FOR LOOP=1 TO A00:NEXT LOOP
235 IF INKEY$="" THEN A00=1
240 COLOR 2:LOCATE 10,19:PRINT "M";:FOR LOOP=1 TO A00:NEXT LOOP
245 IF INKEY$="" THEN A00=1
250 COLOR 2:LOCATE 11,18:PRINT "A";:FOR LOOP=1 TO A00:NEXT LOOP
255 IF INKEY$="" THEN A00=1
260 COLOR 2:LOCATE 12,17:PRINT "K";:FOR LOOP=1 TO A00:NEXT LOOP

```

Since this month had the theme of Educational Programs, I wrote this program so you could make a word search puzzle and give it to your children, or even to a friend to solve!

It seems a little long, but after typing it in, you should be pleased how quickly it puts a list of words in a word search puzzle!

It is very simple to run. After it is working, you are prompted to enter a question and then the answer. All the answers are sorted and then placed in the puzzle, and then the puzzle is printed. The questions will appear at the bottom of the puzzle.

You may have a solution printout if you wish.

There are no special printer codes, so you should have no problem adapting it to any printer.

A thought for improvement could be to write the puzzle to disk, so you can then have a few puzzles ready to be printed instead of making new ones every time. Also you could perhaps adapt it so you can find the words on the screen instead of a printout. Good luck!

```

265 IF INKEY$="" THEN A00=1
270 COLOR 2:LOCATE 14,15:PRINT "R";:FOR LOOP=1 TO A00:NEXT LOOP
275 IF INKEY$="" THEN A00=1
280 COLOR 14:LOCATE 8,24:PRINT "B";:FOR LOOP=1 TO A00:NEXT LOOP
285 IF INKEY$="" THEN A00=1
290 COLOR 14:LOCATE 9,25:PRINT "y";:FOR LOOP=1 TO A00:NEXT LOOP
295 IF INKEY$="" THEN A00=1
300 COLOR 6:LOCATE 11,25:PRINT "D";:FOR LOOP=1 TO A00:NEXT LOOP
305 IF INKEY$="" THEN A00=1
310 COLOR 6:LOCATE 12,25:PRINT "e";:FOR LOOP=1 TO A00:NEXT LOOP
315 IF INKEY$="" THEN A00=1
320 COLOR 6:LOCATE 13,25:PRINT "o";:FOR LOOP=1 TO A00:NEXT LOOP
325 IF INKEY$="" THEN A00=1
330 COLOR 6:LOCATE 14,25:PRINT "n";:FOR LOOP=1 TO A00:NEXT LOOP
335 IF INKEY$="" THEN A00=1
340 COLOR 5:LOCATE 12,24:PRINT "G";:FOR LOOP=1 TO A00:NEXT LOOP
345 IF INKEY$="" THEN A00=1
350 COLOR 5:LOCATE 12,26:PRINT "o";:FOR LOOP=1 TO A00:NEXT LOOP
355 IF INKEY$="" THEN A00=1
360 COLOR 5:LOCATE 12,27:PRINT "r";:FOR LOOP=1 TO A00:NEXT LOOP
365 IF INKEY$="" THEN A00=1
370 COLOR 5:LOCATE 12,28:PRINT "g";:FOR LOOP=1 TO A00:NEXT LOOP
375 IF INKEY$="" THEN A00=1
380 COLOR 5:LOCATE 12,29:PRINT "e";:FOR LOOP=1 TO A00:NEXT LOOP
385 LOCATE 18,9:PALETTE:COLOR 4,15:PRINT "Do you need instructions?";"
390 INS$=INPUT$(1)
395 IF INS$="N" OR INS$="n" THEN 1000
400 IF INS$="Y" OR INS$="y" THEN 405 ELSE 385
405 WIDTH 80:COLOR 15,0:CLS:PRINT TAB(23);"Puzzle Maker!":PRINT
410 PRINT "The idea of this program is to make a simple puzzle for your "
415 PRINT "children, which inturn could be a useful lesson!!"
420 PRINT "
425 PRINT "All you do is give the computer the dimensions of the puzzle,"
430 PRINT "and the number of words if will contain and away you go. It will"
435 PRINT "ask for a question and then the answer to the question. The"
440 PRINT "answer will be place in a word search puzzle going up, down,"
445 PRINT "left, right and backwards. The questions will then be placed"
450 PRINT "underneath the puzzle for your children to answer!"
455 PRINT "
460 PRINT "If there is a word that the computer can't fit it, it will"
465 PRINT "prompt you for one of two options. 1> start over again"
470 PRINT "or 2> throw the word and question away and continue on. If this"
475 PRINT "persists I would either suggest bigger dimensions or less words!"
480 PRINT "
481 PRINT "This program is designed to be used with a printer, so if you"
482 PRINT "if you haven't go one then perhaps you could send in a version"
483 PRINT "that doesn't need a printer!!"
485 PRINT "Press any key to start!";
490 INS$=INPUT$(1)
1000 CLEAR 3000:WIDTH 80:COLOR 15,0:CLS
1010 LOCATE 1,1:PRINT "Do you want this to go to the printer?";:PR$=INPUT$(1)
1020 IF PR$="n" OR PR$="N" THEN TW=80:PRINT "No":GOTO 1050
1030 IF PR$="y" OR PR$="Y" THEN PRINT "Yes":PR$="Y" ELSE 1010
1040 INPUT "How many columns does you printer have";TW
1050 PRINT "Do you want a solution print-out?";:X$=INPUT$(1)
1060 IF X$="n" OR X$="N" THEN PRINT "No":GOTO 1080
1070 IF X$="y" OR X$="Y" THEN PRINT "Yes" ELSE 1050
1080 INPUT "What is the width of the puzzle";W:MD=W
1090 IF W*2<=TW THEN 1110
1100 PRINT "That will not fit in";TW;"columns.":GOTO 1080
1110 IF W<1 THEN 1080
1120 INPUT "The length";L: IF L>W THEN MD=L
1130 IF L<1 THEN 1120
1140 INPUT "What is the maximum number of words in the puzzle";M
1150 IF M>=2 THEN 1170
1160 PRINT "Sorry, there must be at least two words!!":GOTO 1140
1170 DIM AS(L,W),WS(M),QS(M)

```

```

1180 DIM W(M,3),DXY(8,2),DD(28)
1190 PRINT "Now enter a heading that will go over the puzzle:"
1200 PRINT TAB(15);("";TW;"characters maximum!")
1210 INPUT "",XY$
1220 CLS
1230 PRINT "OK. . . Enter a word at each question's mark."
1240 PRINT "To redo the previous word, type a hyphen (-)."
1250 PRINT "When you run out of words, type a period (.)."
1260 SC1=6:SC2=1:FOR I=1 TO M
1264 LOCATE 4,1:PRINT I;"      ";
1265 LOCATE 4,5:INPUT "Please enter the question - maximum 60 characters!";QU$(I)
1270 LOCATE 4,1:PRINT "Next word"+SPACE$(70):LOCATE 4,10:INPUT T$
1280 IF T$<>"-" THEN 1320 ELSE I=I-1
1290 SC2=SC2-16:IF SC2<1 THEN SC1=SC1-1:SC2=64
1300 LOCATE 4,1:PRINT "REDO ";WS(I);". . . ";SPACE$(69)::LOCATE 4,11:
1310 INPUT T$:GOTO 1280
1320 IF T$=".." THEN M=I-1:GOTO 1600
1330 IF LEN(T$)=0 THEN LOCATE 4,1:PRINT "Input error: REDO";SPACE$(62)::LOCATE 4,19
1340 IF LEN(T$)=0 THEN INPUT T$: GOTO 1280 ELSE J=1
1350 TE$=MID$(T$,J,1): IF TE$>"A" AND TE$<="Z" THEN 1450
1360 IF ASC(TE$)>96 AND ASC(TE$)<123 THEN TE$=CHR$(ASC(TE$)-32) ELSE 1380
1370 T$=LEFT$(T$,J-1)+TE$+RIGHT$(T$,LEN(T$)-J):GOTO 1380
1380 IF TE$<"A" OR TE$>"Z" THEN 1410
1390 T$=LEFT$(T$,J-1)+CHR$(ASC(MID$(T$,J,1)))+RIGHT$(T$,LEN(T$)-J)
1400 GOTO 1450
1410 IF TE$=T$ THEN T$="":GOTO 1330
1420 IF J=LEN(T$) THEN T$=LEFT$(T$,J-1):GOTO 1470
1430 IF J=1 THEN T$=RIGHT$(T$,LEN(T$)-1):J=J-1:GOTO 1450
1440 T$=LEFT$(T$,J-1)+RIGHT$(T$,LEN(T$)-J):J=J-1
1450 J=J+1:IF J>=LEN(T$) THEN 1350
1460 IF LEN(T$)>MD THEN 1530
1470 FOR IZ=1 TO I-1:IF WS(IZ)=T$ THEN 1550
1480 NEXT IZ
1490 LOCATE SC1,SC2:PRINT "-";T$;"-";:SC2=SC2+16:FL=2
1500 IF SC2>64 THEN SC1=SC1+1:SC2=1
1510 IF LEN(T$)+FL>16 THEN SC=SC+16:FL=FL-16:GOTO 1510
1520 GOTO 1570
1530 LOCATE 4,1:PRINT "String to long: REDO";SPACE$(59)::LOCATE 4,21:INPUT T$
1540 GOTO 1280
1550 LOCATE 4,1:PRINT "Duplicate Entry: REDO";SPACE$(58)::LOCATE 4,22:INPUT T$
1560 GOTO 1280
1570 WS(I)=T$
1580 NEXT I
1590 REM
1600 CLS:PRINT "Now let me ponder this!!"
1610 FOR I=1 TO M-1
1620 FOR J=I+1 TO M
1630 IF LEN(WS(I))<LEN(WS(J)) THEN SWAP WS(I),WS(J):SWAP QU$(I),QU$(J)
1640 NEXT J,I
1650 FOR I=1 TO 8:READ DXY(I,1),DXY(I,2):NEXT
1660 FOR I=1 TO 28:READ DD(I):NEXT
1670 DATA 0,1,1,1,1,0,1,-1,0,-1,-1,-1,-1,0,-1,1
1680 DATA 2,4,6,8,2,4,6,8,2,4,6,8,2,4,6,8,2,4,6,8,1,3,5,7
1690 FOR I=1 TO M
1700 LN=LEN(WS(I))
1710 NT=0
1720 SD=DD(INT(RND*28)+1)
1730 SX=INT(RND*W)+1:X1=SX+(LN-1)*DXY(SD,1):IF X1<1 OR X1>W THEN 1720
1740 SY=INT(RND*L)+1:X1=SY+(LN-1)*DXY(SD,2):IF X1<1 OR X1>L THEN 1720
1750 NT=NT+1:IF NT>W*L*2 THEN 1810
1760 PRINT "Couldn't fit ";WS(I);" in the puzzle!"
1770 PRINT "Do you want me to start over?";:AS$=INPUT$(1)
1780 IF AS$="Y" OR AS$="y" THEN 1690
1790 IF AS$="N" OR AS$="n" THEN 1800 ELSE 1770
1800 WS(I)=""":QU$(I)="""":GOTO 1890

```

```

1810 J=SY:K=SX
1820 FOR P=1 TO LN
1830 IF LEN(A$(J,K)) AND A$(J,K)<>MID$(W$(I),P,1) THEN 1720
1840 J=J+DXY(SD,2):K=K+DXY(SD,1):NEXT P
1850 J=SY:K=SX
1860 FOR P=1 TO LN: A$(J,K)=MID$(W$(I),P,1)
1870 J=J+DXY(SD,2):K=K+DXY(SD,1):NEXT P
1880 W(I,1)=SX:W(I,2)=SY:W(I,3)=SD
1890 NEXT I
1900 FOR I=1 TO L
1910 FOR J=1 TO W
1920 IF A$(I,J)="" THEN A$(I,J)=CHR$(INT(RND*26)+65)
1930 NEXT J,I
1940 FOR I=1 TO M-1:FOR J=I+1 TO M
1950 IF W$(I)<=W$(J) THEN 1980
1960 SWAP W$(I),W$(J)
1970 FOR K=1 TO 3:SWAP W(I,K),W(J,K):NEXT K
1980 NEXT J,I
1990 INPUT "How many copies of this puzzle would you like";N
2000 PRINT "for each copy, hit return to begin printing..."
2010 FOR C=1 TO N:GOSUB 2020:NEXT C:GOTO 2300
2020 PRINT FM$;:INPUT A$:PRINT:PR$=LEFT$(PR$,1)
2030 FM$="Hit enter to continue!"
2040 T=(TW-2*W)/2:CLS:PR$=(PR$="Y"):TS=(80-2*W)/2
2050 IF PR THEN LPRINT
2060 PRINT:IF PR THEN LPRINT
2070 CLS:PRINT TAB((80-LEN(XY$))/2);XY$
2080 IF PR THEN LPRINT TAB((TW-LEN(XY$))/2);XY$
2090 PRINT:PRINT:IF PR THEN LPRINT:LPRINT:
2100 FOR J=1 TO L:PRINT TAB(TS);:IF PR THEN LPRINT TAB(TS);
2110 FOR K=1 TO W:IF A$(J,K)<>"." THEN 2140
2120 PRINT ". .":IF PR THEN LPRINT ". .";
2130 GOTO 2150
2140 PRINT A$(J,K);". .":IF PR THEN LPRINT A$(J,K);". .";
2150 NEXT K:PRINT:IF PR THEN LPRINT
2160 NEXT J -
2170 PRINT:PRINT:IF PR THEN LPRINT:LPRINT
2180 PO=0:PRINT "Find the answers to these questions in the puzzle!"
2190 IF PR THEN LPRINT "Find the answers to these questions in the puzzle!"
2200 PRINT:IF PR THEN LPRINT
2210 FOR J=1 TO M:IF LEN(W$(J))=0 THEN 2270
2220 IF PO+LEN(W$(J))>8 THEN PRINT:PO=0
2230 IF PR THEN IF PO+LEN(W$(J))>TW-2 THEN LPRINT:PO=0
2240 PRINT QU$(J);STRING$(LEN(W$(J)),". .");IF PR THEN LPRINT QU$(J);STRING$(
(LEN(W$(J)),". .")
2250 PO=PO+16
2260 REM
2270 NEXT J:PRINT:PRINT:PRINT:PRINT
2280 IF PR THEN LPRINT:LPRINT:LPRINT:LPRINT
2290 RETURN
2300 IF LEFT$(X$,1)="Y" OR LEFT$(X$,1)="y" THEN 2320
2310 '
2320 REM
2330 FOR I=1 TO L:FOR J=1 TO W: A$(I,J)=". .":NEXT J,I
2340 FOR I=1 TO M
2350 LN=LEN(W$(I)):J=W(I,2):K=W(I,1)
2360 FOR P=1 TO LN
2370 A$(J,K)=MID$(W$(I),P,1)
2380 J=J+DXY(W(I,3),2):K=K+DXY(W(I,3),1):NEXT P
2390 NEXT I
2400 XY$="Here is the answer key!"
2410 GOSUB 2020
2420 PRINT:PRINT
2430 END

```

Φ

IN BRIEF

NEW TO GOLDLINK

Micro-Educational has just moved over to GOLDLINK! See page *64209#!

If you have been looking for something for your computer and you can't find it, give them a call!

They have things like:-

Maestro modems starting at \$179, monitors for \$199 and printers starting at \$500 and many, many, more goodies. Call them on (008) 02 5229 or Viatel *64209#

One bargain they do have is their disk box which stores 50 disks. It has a perspex lid (which is removable), removable key and 4 dividers for \$20!

COMPUTER SECURITY AT LAST

Exasoft computer systems have some software which may be of interest to all you harddisk owners.

A package called ENTREE has been designed to protect your Hard Disk from unauthorised access.

It comprises a twofold security access by password and the ability to hide files and directories on the disk. A DOS commands help facility is included which would be helpful to the amateur computer user.

There is also a preset option to back-up and restore files. There are 16 passwords and 80 menu items available.

Another good piece of software for all the wordprocessor type people out there is ZIP. This is a 'popup' program which will put postcodes in your documents. No more hassling for the postcode book!

KEEPING UP TO DATE

Are you sick of looking for your diary, and can't find it? Well IQ Smart software (formally ISQ) are selling a program called PORTEX which looks pretty good!

It can be your diary, an address book for filing and printing names and it also has Word Processing with an 80,000 word spell checker!

Help screens are available at the touch of a button.

Portex comes complete with a leather pocket sized ring binder with section dividers, a handy function template and a comprehensive user manual for the novice or expert.

TRANSAREA

If you have been pricing some parts for your computer, have you talked to Transarea LTD?

They are a Hong Kong based company which specialise in manufacturing a wide range of PC systems and Adapter cards for computers.

They carry everything from printers, to harddisks, and monitors to Data terminals.

All their products are under strict quality control and their reliable performance has won them a reputation.

Their address is:

King Hung Commercial Building
4/F,
194-196 Queen's Road Central
Hong Kong

FREESOFT

In this months issue, there is an advertisement for FREESOFT.

Freesoft have a huge library of Public Domain software for your Tandy 1000 or your IBM compatible.

We have received a number of programs for review and they will appear in next month's issue.

Freesoft have everything from Utilities, to applications to Games. For example:

PIANOMAN - A user supported program for playing, recording and editing music.

HOME FINANCE - A complete home finance management system.

KID'S WORDPROCESSOR - Word processing for kids (we have this one for review!)

DISK LABELMAKER - Makes diskette labels for your disks.

and many, many more! The best part of it all is that the disks are only \$12 instead of paying \$100's for the similar product on the market!

KIWI VIDEOTEX

Videotex in New Zealand is booming and has doubled its number of users in the last 12 months!

VIANZ (Video Industry Association of New Zealand) have over 10,000 users and 70 different services available in their second year of service. There are over 120,000 calls per month compared to 60,000 calls per month for the same time last year. The service approaches one million minutes of connect time!

Since the system is still new, the general crowd are connected to it mainly for information material which accounts for 50% of the use, on line data processing 20% of use, reservations for accommodation has 15% of use and communication services accounting for the last 15% of use.



Well possums!! I've just been doing a few turns on my broomstick and I couldn't help but notice all that electronic trash you mere mortals seem to be hanging on to. Just like a lot of little bower birds, aren't we!! Ummmm!!

If any of you darling little possums would like to swap that junk for cash then why not place your ad here.

We'll run your ad for a month or so - and remember possums, let us know if your junk sells so we can adjust our records - and you never know, you just might be able to make enough money to purchase a super turbo charged "stick" like mine.

And possums - do it - now!

Martha.

Wanted to buy

Sep 87

Any voice/sound/speech pack with any associated software, or an oz supplier.

To be used to develop programs for a blind pensioner.

Back copies of Oz R/bow: Jan'83, Nov'82, Apr-Sep'82, Jan & Feb'82, July-Nov'81

2nd hand modem suitable to use Viatel, Stars etc. Must have software & cables if possible.

"Startrader" graphics space adventure game. Tape, disk or oz supplier of same, circa '84(?)

Tom. McCoy,
C/- P.O,
Villawarrin, NSW 2440.
Phone: (065) 671392

Sep '87

\$ make an offer: Digitizer (prefer model no. DS691 from Micro Works, but any other model will do).

Ring Malcolm Patrick on 086-457-637

For Sale:

Sep '87

\$175: NEC Twin disk drives, model PC8023B with controller and both RS-DOS and RB-1.4 chips.

\$100: Grey case 64k ECB CoCo, HJL keyboard, composite video-audio card and power-on LED fitted. (original keyboard included.)

\$ 50: CCR-81 cassette recorder

\$ 40: the lot, various tapes. Includes Raaka-tu (with manual), Colour Computer Learning Laboratory (with manual) Robin Brown's Convert (converts from PMODE 4 to PMODE 3 colour, include Zaxxon demo), CoCo-Oz on Tape and lots of other stuff. 17 tapes altogether, although tapes can be bought separately.

\$ 30: each, original software: Telewriter-64 tape/disk, Dynacalc disk, Pro-colour-file disk, VIP database disk. All with manuals.

\$ 25: Two tandy standard joysticks with leads and one deluxe joystick.

\$ 25: the lot, "Your Colour Computer", by Doug Mosher. "Help" CoCo reference, 21 American Rainbow magazines.

All of the above can be bought separately or the whole lot for \$500. If the prices are more than you can afford, then make an offer.

Ring Barry Carle on (03)-555-8969

Sep '87

\$250: Double sided disk drive + disk full of games. Good condition, controller included. Price negotiable.

Ring Sean Murdoch on 047-748-291 or write to me at PO Box 5, Bringelly, 2171.

Sep '87

\$450: 1 pair TEAC 40 track double-sided drives, no DOS.

Urgent sale!! Call Arthur Slade on 02-674-5620 or Viatel 262289400

.

Sep '87

\$ 60: MC-10 20K RAM expansion.

Various Games for CoCo 1/2

\$ 15: Draconian, Speed Racer, Electron

\$ 12: Moonshuttle, Flying Tigers, Colourpede, Spacerace

\$ 10: Cosmic Clones

\$ 8: Miss Nibbler.

Phone Darren on 066-741944

continued
next page

B&T ELECTRONICS

(Formerly Bayne & Trembath)



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TOP QUALITY CENTECH BRAND
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SOLVE the problem of trying to
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DSDD \$25.00 for 10

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P.O. BOX 239
MARYBOROUGH Q 4650

106 NEPTUNE STREET (071) 23 1369

MARTHA's Trading Post

Sep '87

\$160: DMP105 printer, in original box, + 2 extra
printer ribbons.
\$150: CoCo 2 16k ECB, in original box.
\$100: Multipak interface + manual, all in
original box.

Phone Trevor on 02-605-2059, or write to Trevor
Kitchens,
PO Box 78, Glenfield, 2167

Oct '87

\$ 25: Musica II
\$ 70: (ono) OS-9 Pascal Compiler
\$200: (ono) DMP-100: excellent condition
\$280: (ono) Avtek mini-modem & software for CoCo III

Please write to Stephen Farrell,
4/184 Donnelly St,
Armidale, 2350
or call (067) 726-002

for Sale - \$150 ONO: CoCo2 B type.
Contact John Foxon on phone 07 2087820.

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GOLDSOFT

P.O. BOX 1742, SOUTHPORT, QLD. 4215 Phone (075) 39-6177

Goldsoft Price List as at November, 1987

Please tick your requirements.

HARDWARE

CoCoConnection: \$210.05 ()
Video Amp: With sound - \$35.00 ()
Without sound - \$25.00 ()
The Prober: \$49.95 ()

GOLDLINK

Access Goldlink #642# on Viatel with
a 1200/75 baud modem. Annual subscription:
\$44.95 ()

SOFTWARE

Magazines, Tapes & Disks

Australian CoCo (Advanced Programs for your
CoCo):

Magazines: Tape () Disk ()
12 Months \$39.95 () 12 Months \$123.75 ()
6 Months \$24.95 () 6 Months \$74.25 ()
1 Month \$4.50 () 1 Month \$16.50 ()

Softgold (Programs for your CoCo):

Magazines: Tape () Disk ()
12 Months \$39.95 () 12 Months \$123.75 ()
6 Months \$24.95 () 6 Months \$74.25 ()
1 Month \$4.50 () 1 Month \$16.50 ()

Gold Disk - Available Quarterly:

1 - \$16.00 ()
2 - \$16.00 ()
3 - \$16.00 ()
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5 - Coming Soon !!!

The CoCo3 Tape/Disk:

#2 - Tape: \$16.00 () Disk: \$16.00 ()
#3 - Tape: \$16.00 () Disk: \$16.00 ()
#4 - Tape: \$16.00 () Disk: \$16.00 ()

"Say the Wordz":

Two Curriculum based speller programs for
your Tandy Speech/Sound pack: \$29.95
Req: 32K + Tandy Speech Pack ()

Best of CoCoOz - \$15.00

A selection of programs from Australian
CoCo Magazine.

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# 2.2 - Games 32K:	()	()
# 4 - Business:	()	()
# 5 - Adventure:	()	()
# 6 - Preschool:	()	()
# 7 - Graphics:	()	()
# 8 - Games 16K:	()	()
# 9 - Games 32K:	()	()
#10 - Education:	()	()
#11 - Education:	N/A	()

BRIC-A-BRAC

Blank Tapes: 12 @ \$16.00 ()
(C-30) 1 @ \$2.00 ()
Tape cases: 12 @ \$5.00 ()
Disk DSDD: 10 @ \$20.00 ()
1 @ \$2.50 ()

BOOKS

Help (for your CoCo): \$9.95 ()
Micra Help (for your MC-10): \$9.95 ()

BACK ISSUES

Australian CoCo: Sep 84 - Dec 85: \$2.00 ()
Australian CoCo: Jan 86 - Feb 87: \$3.75 ()
Australian Micra: Aug 84 - Dec 85: \$2.00 ()

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(Stop between numbers = i.e.; else a.h.; but, hyphen between = both)

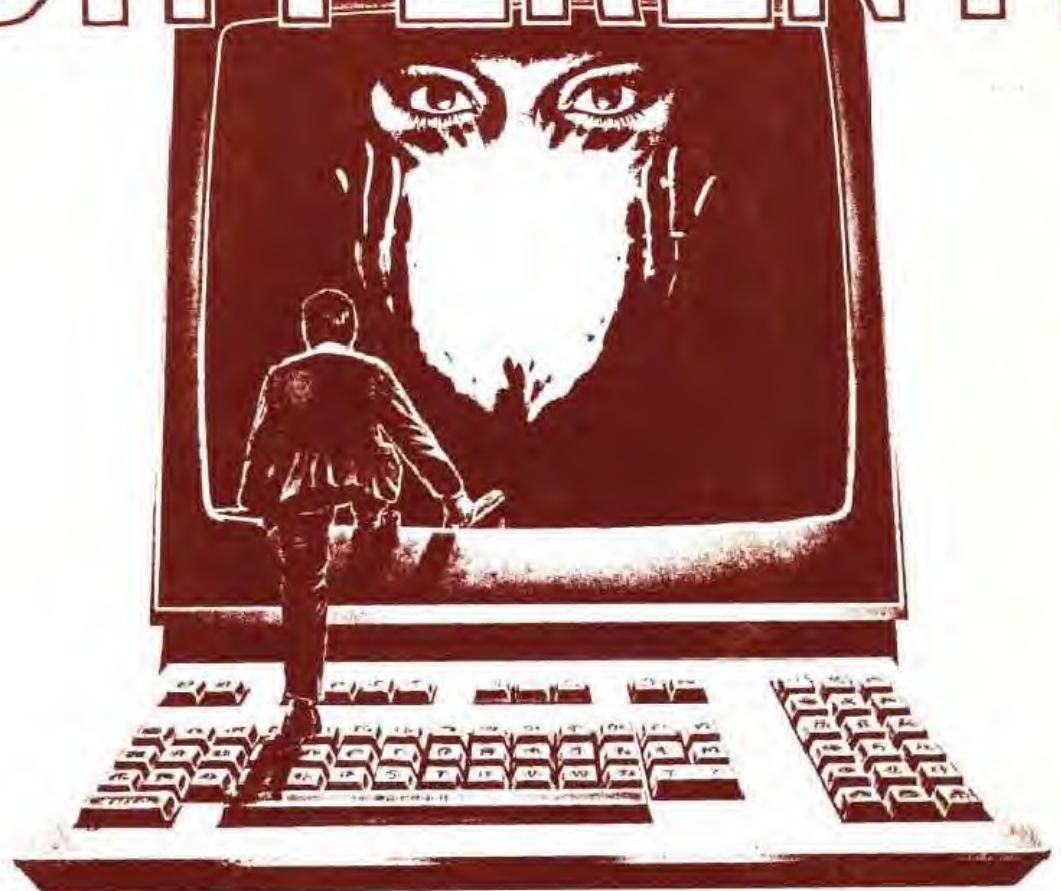
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